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No. 2929. SATURDAY, FEBRUARY 17, 1917. **Price 6d.**

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Hunterian Oration, 1917,

ON

THE INFLUENCE EXERTED BY THE MILITARY EXPERIENCE OF JOHN HUNTER ON HIMSELF AND ON THE MILITARY SURGEON OF TO-DAY.

BY

SURGEON-GENERAL SIR G. H. MAKINS, K.C.M.G., C.B.

THIS day one hundred and eighty-nine years ago witnessed the birth of John Hunter. Since the year 1814 it has been customary for a member of the Council of this College to deliver at stated intervals an address recalling the memory of that illustrious man.

The speakers on these occasions have in turns devoted the short space of time at their disposal to either a philosophical disquisition, an attempt to form an estimate of the influence exerted by Hunter on the surgical thought of his time, or to dwell upon some portion of the writings he has left us.

My own powers are unequal to the first task, while my knowledge of the state of surgery as Hunter found it is too limited to allow me to essay the second. I therefore propose to deal briefly with his work as a military surgeon, and to try and show what influence this may have had on his successors and upon himself, and how far the views which he held and taught deviate from those which guide the military surgeon of to-day. I think the divergence is not a very wide one, for although some of the most modern surgical practice has been spoken of as a *Revolution*, yet the general tendency has rather been in the direction of a *Reaction*. I believe that this reactionary character has been as striking in the surgery practised during the present war as it has been in the military methods employed. I may instance the return to the direct transfusion of blood, the performance of excision of joints in the early stage of acute arthritis, the extensive operations for head injuries, and the character of the methods of wound treatment advocated by some. Even in the case of the chief triumph of recent military surgery—operations for injury of the hollow abdominal viscera—the advance has depended rather on the favourable conditions furnished by the nature of the warfare than on any change in surgical principles.

Of John Hunter's actual life and doings in the field we know little. In the year 1760 he went as surgeon on the staff to Belleisle and Portugal, his term of active service amounting to two years, while in 1790 he was appointed inspector-general of hospitals and surgeon-general of the army.

It is perhaps not astonishing to find that not a small share of the meagre correspondence at our disposal is devoted to matters regarding promotion, pay, the character of his seniors, and the social qualities of his colleagues. The world and military life have no doubt altered but little in these respects.

With the exception of his own writings nothing remains of the surgical history of the wars in which he took part. This is to be explained by the fact that the wounded men were transferred on board ship as quickly as possible and sent to England. Hence Hunter, as is the case with his successors of to-day, was afforded but small opportunity of following out the complete history of the majority of the patients who may have come under his care. His own brief mention of his work is characteristic enough; he says in one of his letters:[1]

> Thank God I have succeeded in everything I have attempted, but my practice in gunshot wounds has been in a great measure different from all other, so that I have had the eyes of all the surgeons upon me, both on account of my supposed knowledge and method of treatment.

How far Hunter's immediate colleagues agreed with his opinions and practice it is impossible to tell, but that his influence at a later date was great is evident from the comments of the next great military authority belonging to our own College. Mr. Guthrie says:[2]

> Hunter served for a few weeks in 1761 at the siege of Belleisle, and it is much to be regretted that his opportunities were not sufficiently numerous to enable him to draw such inferences from them as would have left but little to desire. The greater part of what he did leave was from this cause found not to accord with the observations made by his successors, while the prestige attached to his name was so great, as much to impede their progress on many essential points.

An examination of Guthrie's writings does not, however, appear to afford much support to this statement, except in so far as Hunter's disinclination to perform either primary or intermediate amputations is concerned. We shall perhaps do better, therefore, to shortly examine for ourselves the material which Hunter left behind him, and judge how far his opinions and teaching differ from those of to-day. While, however, confining ourselves for the most part to the two lectures especially devoted to the treatment of gunshot wounds, we must bear in mind that Hunter states that his "extensive opportunities of attending to gunshot wounds" drew his attention to the subject of "inflammation in general" and enabled him to make observations which formed the basis for his *Treatise on the Blood and Inflammation*.

The two lectures on the treatment of gunshot wounds differ considerably in character from the series devoted to general surgery. They are more simple and direct, less overlaid by theory, and consist for the most part of clinical observations and practical instructions. Perusal of them furnishes some support to Guthrie's criticism, in that the illustration of some of the statements made is found in descriptions of cases met with at a later date in civil practice. An equally satisfactory explanation of this occurrence is, however, offered by the fact that for these lectures, as in all Hunter's writings, the material on which they are based was collected many years before the time at which it was utilized for publication.

In the second lecture, devoted to gunshot injuries of the special regions of the body, little is included which is not equally applicable to the subject to-day. In dealing with the subject of injuries to the head Hunter belonged to the active school—any injury appeared sufficient excuse for trepanning the skull. He dwells on the necessity of raising a sufficiently extensive flap to allow of proper exploration of the injury to the skull, and speaks of the propriety of incising the dura mater in some instances. With regard to the latter procedure, however, he says: "Whenever I have seen the dura mater opened, the brain has worked through the opening, and the patients have died";[3] hence he recommends caution.

The favourable prognosis attendant upon wounds of the chest is recognized, also the importance of collapse of the wounded lung in restraining primary haemorrhage, and the tendency of the blood effused into the pleural cavity to clot. Hunter[4] made a number of experiments on the production of pneumothorax, etc., on dogs, and recommends "the operation for the empyaema" in cases of haemothorax. It does not appear, however, whether he ever performed this operation.

In the section on injuries to the abdomen the expectant method of treatment is imposed, and this perhaps especially because Hunter was familiar with the favourable course which followed the formation of a secondary faecal abscess and fistula when the colon had been injured. In the matter of diagnosis no great advance has been made since his time, except that dependent on the use of the *x* rays in localizing the seat of foreign bodies. The value of localized pain and tenderness as a diagnostic aid is dwelt upon, also the various haemorrhages as signs indicative of injury to special viscera. Again, it is interesting to notice that he dwells upon the absence of any certain sign denoting injury to the spleen, also the fact that either the spleen or spleen and liver may be wounded without any obvious adverse result. The often rediscovered fact that there is little tendency for the contents to escape from a wound of the small intestine was also impressed by Hunter. In view of the modern treatment of septic peritonitis it is instructive to note that the suggestion is made of placing the patient in a tepid bath in order to supply fluid to the general constitution. Directions for treatment consist, however, mainly of instructions how to deal with the secondary consequences of injuries to the abdominal viscera; as to primary lesions he says, "I should suppose the very best practice would be to be quiet and do nothing, except bleeding, which in cases of wounded intestine is seldom necessary."

Conservatism is impressed in the matter of primary removal of bone fragments in gunshot fractures, and the

too early interference with the sequestra. Hunter, in fact, takes the same line in dealing with these as he lays down in the case of retained missiles. "In general there can be no better way of coming to a part or extraneous body than by waiting for the formation of an abscess there."

The one point on which Hunter's immediate successors appear to differ most freely from him is as to the line to be followed when an amputation has to be considered; he says, "I have already observed that few can support the consequences of the loss of a lower extremity when in full health and vigour"; hence he avoided primary amputation whenever possible, condemned operations of an intermediate nature, and preferred those of the secondary class.

We may now pass on to the question of the treatment of gunshot wounds in general, dealt with in the first lecture and throughout the whole *Treatise on the Blood and Inflammation.*

WOUND TREATMENT.

Hunter's methods of treatment were guided by the views held by him on the pathology of the healing of wounds, and these methods were limited in consequence of his ignorance of the part played by infection as a cause of inflammation. Hence he is not concerned to differentiate between the process of repair and that of inflammation.

He says:[5] "The injury done has in all cases a tendency to produce both the disposition and the means of cure. The stimulus of imperfection taking place immediately calls forth the action of restoration"; yet "injuries often excite more action than is required."[6] Then inflammation is excessive, and this "may arise from a vast variety of causes with which we are at present unacquainted; nay, which we do not perhaps even suspect."[7]

While he regarded suppuration as an unavoidable consequence of many wounds, yet he says, "suppuration may be considered a resolution, but it is the mode of resolution we commonly wish to avoid."[8] Hence his attempts to diminish the degree of general reaction by blood-letting, and locally to effect an immediate closure of the wound. "In parts which have been divided and exposed the inflammation is in great measure prevented by bringing them together," and when this cannot be done, "Nature attempts to prevent inflammation by covering the wound with blood and forming an eschar."[9] Thus a power of resolution is shown "even in cases where the parts have been exposed."

It is of interest in this relation to recall that he combats the opinion promulgated by Ambroise Paré and held long after, that exposure to the air was in itself a cause of suppuration. "Exposure to air certainly has not the least effect on parts exposed, for a stimulus would arise from a wound even were the part contained in a vacuum." Air takes no part in the formation of an abscess, cellular emphysema is not attended by suppuration, the air itself in a pneumothorax is not a source of danger, nor is air necessary for the development of a gonorrhoea.

In describing the special characteristics of gunshot wounds, contusion is the feature upon which he lays most stress.[10] He observes that the degree and extent of the contusion varies inversely with the velocity retained by the missile. Thus, the greater the velocity retained by the ball the cleaner it wounds the parts, yet they slough; if the velocity is low the mischief is less and the ball more easily deflected. If the velocity be high, blood vessels are divided instead of being contused, if it be very low they are torn.

The contusion of the tissues and the resulting slough prevent healing by the "first intention" "from which circumstance most of them *must* be allowed to suppurate."[11] Hunter observed that the tissue devitalized by contusion temporarily protected that lying beneath, and hence the advent of inflammation (infection) was retarded, an observation which still retains its force in the case of more modern projectiles. Hunter deprecates the practice handed down from Ambroise Paré and Wiseman of routine enlargement of gunshot wounds, and ascribes its origin to anxiety on the part of the surgeon to remove a foreign body. He then points out the difficulty often accompanying the attempt to extract foreign bodies, the fact that experience had shown that these might be left without evil consequences, and concludes that the custom of opening up wounds had been continued in ignorance of its primary object. He does not appear to have realized that the practice afforded an advantage, not then properly appreciated, of supplying drainage to an infected area.

Still the rule "that it should not be opened up because it is a gunshot wound, but because there is something necessary to be done which cannot be executed unless the wound is enlarged"[12] is sound enough, as also the statement, "this is common surgery and should be military surgery respecting gunshot wounds," and is certainly to be preferred to that of Baron Percy, enunciated so late as 1792, "The first indication is to change the nature of the wound as nearly as possible into an incised one."[13]

Hunter, however, improperly undervalues the argument that enlargement of the wound takes off the tension arising from the inflammation, because he considered inflammation a necessary consequence of gunshot wounds, and "any increase in the size of the wound was to be considered as an extension of the first mischief, and must be supposed to produce an increase of the effects arising from that mischief."[14]

He then proceeds to enumerate a number of conditions which call for enlargement of the wound which obviously hold good to-day; but "if none of these circumstances has happened I think we should be very quiet."

Nevertheless he recognized the danger of a contour wound, and recommended an incision over the centre, or the laying open of the entire track, to avoid the danger of abscess formation and the occurrence of extensive suppuration—a danger not always appreciated as it should be in dealing with contour wounds of the head, chest, and abdomen even to-day.

LOCAL TREATMENT OF THE WOUND.

The injury done has in all cases a tendency to produce both the disposition and the means of cure. The stimulus of imperfection taking place immediately calls forth the action of restoration.[15]

The first and great requisite for the restoration of wounded parts is rest, as it allows that action which is necessary for repair to go on without interruption.[16]

In these two axioms we find the theory upon which Hunter's treatment of wounds was based. The dominating factor in the healing of the wound he held to be the vital process or action of the body, a principle dwelt upon in equal measure by his great successor Lister, and one to which perhaps too little attention is given even to-day by the originators and advocates of various local methods of wound treatment.

He drew little distinction between the process of repair and that of inflammation, regarding both as the consequences of an "operation" in which the blood vessels took the major share, since in the state of knowledge then existing he was ignorant of the important part taken by increased activity of the fixed tissue elements in addition. Again, his ignorance of the common dependence of inflammation on infection hampered him in devising any local form of application to the wound. Hence we find him mainly occupied with discussing the relative merits of a cold or hot water dressing, and the advantages to be obtained by the use of the poultice which required to be less frequently reapplied and could be removed more easily and with less pain to the patient.

Regarding the healing of a wound as a natural "vital operation," Hunter saw no greater mystery in this process than in the growth and development of the infant to the man. So to-day in apportioning its relative value to any special form of wound treatment, we must bear in mind that it is difficult—aye, impossible—to prevent the healing of a wound, much as the process may be interrupted or distorted by extraneous causes.

During the past two years the local treatment of gunshot wounds has given rise to as lively and ardent discussion as that accompanying the introduction of the antiseptic principle by Lister during the earlier part of the last half-century. It appears as if the steady development of the "aseptic principle" and its obvious success in civil practice had lulled the modern surgeon into a happy dream, from which he was suddenly awakened to the terrible spectacle of wounds infected in a proportion and to a degree to him almost incredible.

As a ship which passeth over the waves of the water, which when it is gone the trace thereof cannot be found, neither the pathway of the keel in the waves.

So, indeed, the experience of the pre-antiseptic surgeon seemed to have vanished and left no trace in the minds of men. This is perhaps the less remarkable in that the simple wounds inflicted by the bullet of small calibre in recent wars, had proved themselves of little consequence in affording either a ready pathway for the entrance of infection or a fertile ground for its extension.

The antiseptic measures suited to meet the limited demands attendant on the practice of aseptic surgery, and in which trust was at first reposed, proved impotent when applied to the treatment of the severe and grossly infected wounds produced by the altered forms of missile employed in the present warfare.

This disappointing experience was followed by a brief acute reaction in the direction of attempting an immediate and complete primary sterilization of the wound by the application of powerful antiseptic media such as liquefied carbolic acid and strong solutions of mercurial salts.

It appears strange that attempts at complete primary sterilization of the wounds should have found so much advocacy. No surgeon has ever succeeded in procuring immediate sterilization of extensive infected areas of tissue, and the striking statement made by Lister [17] on this subject seemed to have been completely forgotten:

> If, for example, a pair of forceps is handed to the operator with the intervals between the teeth occupied by dry septic pus, and a portion of this dirt becomes detached and left in the wound, the evil cannot be corrected by any antiseptic wash that is now at our disposal or that the world is ever likely to see.

This being Lister's view regarding the ill effects liable to follow the detachment of particles of infective matter from the teeth of a forceps, we may readily assume what his opinion would have been as to the feasibility of complete primary sterilization of gross infections dependent on the passage or impaction of fragments of shell and dirty clothing.

The complete failure of attempts at effective primary chemical sterilization led to increased resort to mechanical cleaning of the wound by removal of devitalized and infected tissue by the knife and scissors, and to the employment of counter incisions for drainage, both to prevent extension of the infection and to effect a cure. These procedures remain measures of primary importance whatever subsequent method of treatment may be adopted.

Bacteriological investigation of gunshot wounds during the process of healing has shown that, whatever method of treatment may be adopted, a certain primary sequence of bacterial growth and development is maintained.

Examination of "smear" preparations taken during the first twelve hours reveals the presence of no organisms although cultures prove positive. This incubation stage is followed by the appearance first of micrococci and a highly varied flora of other organisms. These latter, in a properly drained wound, tend to die out rapidly, and in the course of five or six days micrococci alone may persist. This is the crucial period for the completion of sterilization, and success depends on two factors: (*a*) The vitality of the natural process; and (*b*) the efficiency of the method of treatment adopted.

As to the first factor, in a certain proportion of instances the vital powers will suffice, but in a considerable number either the primary reaction is deficient, the infection too gross to be efficiently dealt with, or the infection regains ascendancy when the initial reaction commences to fail in power.

Determination of the degree of activity and efficiency of the vital powers in any given case is impracticable, hence some general plan of treatment must be adopted for all. Opinion has been to some extent divided as to the most desirable method, and the chief differences have arisen in connexion with the antiseptic system as laid down by Lister and the physiological or phylacagogic system of Wright.

The question obviously resolves itself into that of the secondary sterilization of wounds; in the one method an attempt is made to supplement the natural vital powers from without by the employment of chemical media to inhibit or destroy bacterial growth in the wound; in the second an attempt is made to modify and strengthen the vital powers by the local application of a simple physical process.

In proceeding to a consideration of the comparative value of these two methods from the point of view of the surgeon it is well to first inquire what is to be hoped for by the use of chemical antiseptic media. Lister proved beyond any possibility of doubt the absolute efficiency of such media as prophylactic or preventive agents, yet both his teaching and writings indicate that he viewed the question of dealing with an established infection from an entirely different standpoint. Of this no better illustration can be found than in the sharp distinction which he drew between "bactericidal" and "inhibitory" media and the way in which he employed them respectively.

We may first ask, Is it possible by chemical means to effect the sterilization of tissue lying beneath the surface of the wound?

It has not been proved that any chemical antiseptic can penetrate the tissues in sufficient quantity or to a sufficient depth to exercise bactericidal powers, unless it is at the same time sufficiently powerful to destroy the tissues themselves. As in other methods, the deeper tissues must depend upon the vital process for sterilization, or, as Lister terms it, the co-operation of the "natural antiseptic"—that is, the constituent parts of the blood.

Before leaving this part of the question, we may also ask whether a complete clearance of organisms from the tissues deep to the surface of the wound is a necessary preliminary to closure of the cavity. This question may be answered in the negative. Evidence is offered by the common observation that many wounds, the surfaces of which are free of organisms, may be safely and definitely closed if the surface be not disturbed or injured in the course of the operation, while others in which disturbance of the surface is necessary for the completion of the operation often flare up with a fresh infection. Moreover, experience of the safety with which a serous cavity such as the peritoneal may be closed in the evident presence of a definite degree of infection also supports this view; again, a less satisfactory observation, the long period during which the organisms which have given rise to an attack of osteomyelitis or enteric fever may remain latent is familiar enough. A certain number of organisms may no doubt be safely left to their fate and for the tissues to deal with.

The virtues of chemical antiseptics are restricted to the power to render sterile the wound surfaces and the cavity included by them. If this sterilization be effected the patient is protected from the dangers of a renewed direct extension of the infection and from the risk of absorption of toxins formed by the bacteria which may collect under pressure in the recesses of the wound cavity. Further, the dangers and ill effects of prolonged suppuration may be avoided.

To effect this purpose Lister's essentials of a thoroughly trustworthy unirritating antiseptic, so stored up that it cannot be dissipated to a dangerous degree before the dressing is changed, must be fulfilled.[18] It is of interest to recall that Lister in 1870[19] made a suggestion for the primary treatment of gunshot wounds, consisting in the provision of an abundant supply of external dressing soaked in an oily solution of carbolic acid, and again, during the Boer war, suggested [20] the use of a powder of the double cyanide of mercury and zinc as an antiseptic reservoir; but neither of these methods were largely employed or successful in application.

The phylacagogic or physiological method of Wright seeks to attain the same objects as the antiseptic method by the local application of a physical process to regulate, modify, and alternately augment the strength of the various factors involved in the normal vital reaction. It seeks:

I. To maintain the patency of the opened up lymphatic vessels and spaces which normally undergo closure in the same manner as the wounded blood vessels, and to encourage an increased flow of lymph from the wound surface with the following objects:

(*a*) To effect a natural lavage of the tissues.
(*b*) To maintain an outward current in the flow, and thus oppose the entrance of microbes into the tissues.
(*c*) To utilize the bactericidal properties of the fluid.
(*d*) To remove exhausted lymph from the tissues in place of leaving it to return by the normal route of the lymphatic circulation.
(*e*) To maintain a moist surface to the wound, and wash away débris of devitalized tissue and bacteria. In this

last particular simple irrigation on the part of the hypertonic or isotonic solutions plays an important part.

II. At a later date to encourage and increase the number of migrating leucocytes, both with the view of increasing phagocytosis and providing a sufficient supply of active trypsin to aid the separation of sloughs.

The normal outflow of lymph is increased by the physical ("drawing") process induced by continuous irrigation of the wound with a hypertonic solution of sodium chloride, and the augmented migration of leucocytes by similar alternate irrigation with "isotonic" solution (normal saline).

Before attempting to gauge the relative value to be assigned to the antiseptic or to the phylacagogic methods respectively, it may be at once allowed that in some instances the unaided normal vital reaction may attain parallel results when treatment with simple dressings or mere exposure to air and sunlight is adopted; but, unfortunately, such results form rather the exception than the rule. Hunter, in referring to the good results which may follow primary closure of the wound, or closure by scab formation, deals with them as an exception, and tells us "thus a power of resolution is shown, even in cases where the parts have been exposed."

It may be proper here to offer some preliminary criticism as to the validity of the theory upon which the phylacagogic method is based. Hunter[21] says, "yet injuries often excite more action than is required." It is indeed indubitable that in a large proportion of all wounds the activity of the reaction exceeds that necessary for the process of repair, or for sterilization of the tissues, proceeding in some even to the undesirable degree of acute inflammation and tissue destruction. In fact, in the process of repair, as in the normal physiological processes of the body generally, a large margin of excess is allowed to meet possible accidents in the course of the closure of the wound.

I think we may, therefore, assume that the normal vital reaction is not, as a rule, deficient in activity, and that even in a wound that heals normally by granulation both the outflow of lymph and the migration of leucocytes tends to be wasteful of the vital powers of the patient. Again, it must not be forgotten that an excessive lymph flow is in itself a serious drain upon the powers of the patient, a fact illustrated in a remarkable degree by the rapid emaciation seen to occur in the subjects of the multiple superficial wounds which have formed so strong a feature of the surgery of the present campaign. Lastly, any interference with the coagulation which limits the primary flow of lymph following the wound tends to remove one of the most important barriers afforded by Nature for the protection of the system from the dangers of the entrance of organisms and their toxins from the infected area.

The most useful practical test of the efficiency of any method of wound treatment is furnished by observation of the date at which micro-organisms disappear from the surface of the exposed tissues, and at which the wound may be safely and permanently closed by suture or other means. When subjected to this test, the antiseptic method has proved itself more rapid and more trustworthy than the phylacagogic.

As an example of the antiseptic method, that known as the Carrel-Dakin is chosen because it appears to fulfil the conditions already laid down, and because in the hands of its originator it has afforded admirable results, which have, moreover, been repeated by other surgeons and in our own camps.

It may be at once allowed that the method demands special care and exactitude in application, but such objections as may be raised as to its suitability for military surgery are of a practical and not of a theoretical nature. Such are the necessity of strict supervision of the standard composition of the solution of the hypochlorites employed, the need for care and judgement in locating the instillation tubes, the necessity of regularity in the instillations of the fluid, and the difficulty in some cases of ensuring that the patient's clothing and bedding do not get soaked. All these problems are more difficult of solution in military than in civil practice, but they are not insuperable, while the last trouble attends equally the irrigation forming a part of the phylacagogic method.

Allowing these practical difficulties we find in compensation that the wound cleans more rapidly, firmer and healthier granulations form, the organisms die out more promptly, the occurrence of suppuration is reduced to a minimum, or actually avoided, secondary wound complications are rarer, and the wounds are fit for closure at a much earlier period. The treatment, moreover, attains success even when applied to suppurating wounds of some standing.

The special success which has attended the use of this method depends mainly on the highly ingenious plan of maintaining the constant supply of the antiseptic medium by specially devised tubes and on the character of the antiseptic employed. Other antiseptic methods, however, have attained results which, while less striking, yet are superior to those observed with the phylacagogic. Of these latter, the most satisfactory have been the dressing with solution of hypochlorous acid (eusol) and the iodoform bismuth compound of Rutherford Morison. The latter, which combines a maximum amount of rest to the wound, a "persistent storage" of an efficient inhibitory antiseptic, and a minimum of attention on the part of the surgeon, has much to recommend its employment in military surgery, where economy of time and labour are so important. Its employment as a primary method of treatment of all gunshot wounds is, however, not free from serious risks, and therefore, in the absence of further experience, not advisable.

In application the phylacagogic method fails to realize the merits which have been claimed for it. The increased flow of serum from the tissues has proved of small value from the bactericidal aspect; the "fluid" "drawn" has been shown by other observers (Parry Morgan,[22] and others) to be deficient in organic constituents and hence incomparable to the normal lymph furnished in response to the stimulus of the original injury and resulting infection; and, either in the "fluid" itself or admixtures of it with hypertonic salt solution, organisms such as the streptococci grow freely. This deficiency in the quality of the "fluid" drawn is intelligible if it be regarded as the product of a local physical process exerted on the wound itself. Such a process can hardly be relied upon to induce great additional activity either in the fluid or cellular elements which are normally provided as a response to the combined stimulus of injury and subsequent infection on the organism as a whole, in which case we have to deal with a general vital reaction of the entire system the whole intensity of which is directed towards the infected region. The phylacagogic method, in fact, while attempting to increase the normal vital reaction within the tissues, an object not always to be desired, deals inefficiently with the extraneous elements in the wound cavity which form the main obstacle to normal healing.

In practice it is found that with the phylacagogic method the initial changes in the wound are slow, the tissues tend to become sodden, the separation of sloughs is delayed, and a longer period is required before the wound surface can be regarded as having reached the stage at which secondary closure can be effected. Hence the period in which secondary wound complications may arise is prolonged; moreover, in cases treated by the phylacagogic method which fail to reach the "closure" standard, a few days' treatment with an antiseptic often suffices to attain the result desired.

In passing from the subject of the local treatment of wounds, we may conclude with Hunter that "the stimulus of imperfection taking place, immediately calls forth the action of restoration"; further, that the vital operation may be most effectively aided, not by attempting to regulate and modify the process, but by striving to nullify the extraneous influences which tend to distort and interrupt it.

I can scarcely leave the subject of wound treatment in the present war without a word of mention of the most serious wound complication that has had to be dealt with—gaseous cellulitis or gas gangrene.

I can find no evidence that Hunter was familiar with this scourge. In the lectures on gunshot wounds a case is quoted in which "air came out of the wound" during the process of removal of a ball from the abdominal wall, but no mention is made of any special condition of the tissues, and it may well have been a *Bacterium coli* infection secondary to a minor injury of the colon.

Hunter was certainly conversant with the rapid decomposition with development of cellular emphysema which sometimes follows death as a result of a general anaërobic infection of the body, hence we must conclude that he

would have been quick to detect a similar form of cellulitis during life.

It seems more than doubtful whether gas gangrene has ever before assumed such a serious aspect during war. The writings of Ambroise Paré make no mention of emphysema as a sign in the gangrenous wounds observed by him, neither do the more modern writings of Guthrie suggest that the hospital gangrene seen in the wars in the early part of the last century in any way resembled the "gas gangrene" of to-day.

It is clear that Lister, when speaking of hospital gangrene, referred to a process similar to that described by Guthrie, and surgical textbooks generally have based their descriptions of hospital gangrene on a complex of identical signs.

On the other hand, anaërobic gangrene under the title of acute traumatic gangrene has for many years been individualized as a definite disease, and its pathology to some extent elucidated.

It is clear that the form of hospital gangrene observed during the American War of the Rebellion coincided in character with that described by Guthrie, and in the reports special stress is laid on the observation that the process did not involve the muscles. Lastly, no mention of "gas gangrene" has been made in any of the more recent campaigns.

Hence I think it must be allowed that the frequency of gas gangrene is to be regarded as a peculiarity of this war, referable perhaps to the nature of the soil, and perhaps to the abundant diet of the men and irregularity in defaecation. In the latter relation it is a striking fact that of a small series of patients who died as a result of wounds of the colon, in every case a rapid general *post-mortem* anaërobic infection of the blood took place. On the other hand, hospital gangrene of the classical types has been conspicuous only by its absence; during a period of two and a half years I have only seen one or two cases which seemed to resemble the spongy form, although the membranous type has been occasionally seen.

Hunterian Ligature.

No individual procedure originated by John Hunter has preserved the freshness of his name to a greater degree than the operation for the cure of popliteal aneurysm. Every student of medicine at an early date of his career makes acquaintance with Hunter's canal, and later with the principle of proximal ligature.

In one respect the influence exerted on military surgery by the knowledge of the ease and safety with which proximal ligature can be performed has not been for the good. It has encouraged the employment of proximal ligature at the seat of election for secondary haemorrhage and even for primary bleeding from a wounded artery. Both these practices are to be condemned, except in rare instances of absolute necessity.

It is to be regretted that Hunter himself did not write the paper describing his operation and the grounds upon which he was led to undertake it, but the paper by Sir Everard Home included amongst Hunter's writings opens up one question of considerable interest to-day.

In at least one of the cases there described,[23] possibly in the first three, both the femoral artery and vein were included in the ligature; in the fourth we are definitely told that the artery only was included. From that period onwards surgical opinion has been definitely to the effect that the greatest care should be taken when occluding a main artery to avoid all injury to the vein. In fact, every operation for the ligature of an artery has been so devised that the aneursym needle is passed in a direction away from the vein in order to minimize the risk of injury to that vessel. This, not alone to avoid the technical inconvenience of immediate haemorrhage, but also with the definite object of preserving the venous circulation intact.

Observation of a large number of coincident wounds of large arteries and veins has in no way endorsed the view that simultaneous occlusion of both artery and vein exercises any deleterious influence on the subsequent collateral arterial circulation and the vitality of the limb.

In support of this statement a few examples illustrating the innocuous nature of operations for the occlusion of veins in general may be first given. Operations for the cure of varicose veins have demonstrated the ease with which a compensatory balance is attained when the blood is diverted from the larger channels. Occlusion of the internal jugular and other large venous trunks effected in order to prevent the diffusion of septic emboli (the process of septic thrombosis was, I believe, first observed and described by John Hunter himself[24]) has not given rise to obvious permanent trouble.

In a very considerable proportion of gunshot injuries to large arterial trunks the neighbouring vein is contused and becomes thrombosed, and this has not been shown to give rise to increased risk of gangrene of the limbs. Ligature of the common carotid artery, together with the internal jugular vein *en masse*, has been performed in cases of emergency without increased risk of the development of the cerebral anaemia and softening so often a consequence of ligature of the artery alone. Further, where simultaneous ligature of both artery and vein in other parts of the body has been obligatory on account of wounds of both vessels untoward events have not been observed.

Evidence, moreover, exists that under certain conditions simultaneous occlusion of both artery and vein is a preferable procedure. The first example, not an unmixed or simple one, may be sought in the results observed to follow the application of a single proximal ligature to the artery in cases of arterio-venous aneurysm or aneurysmal varices of the femoral or popliteal vessels. In patients so treated during the South African campaign, gangrene of the limb followed in more than 50 per cent. of the cases.[25] The frequency of this accident finds a simple explanation if we consider what actually results from the operation. The main vessel being occluded and the direct arterial pressure from behind being practically abolished, blood which has been carried by the arterial collaterals to the distal portion of the injured trunk, instead of passing to the peripheral circulation, takes the course of least resistance backwards into the vein through the arterio-venous communication, and thus the limb practically bleeds to death much in the same way as if the distal end of the wounded artery opened on to the surface of the limb. Hence, the comparative safety of removal of the communication *en masse* and occlusion of all four openings by ligature.

A more striking example is offered by the result of ligaturing the popliteal vein alone for the treatment of senile gangrene of the foot.[26] W. A. Oppel,[27] ascribing the good results occasionally observed to follow arterio-venous anastomosis for the cure of this condition to obstruction of the venous circulation and consequent rise in the blood pressure of the limb, was led to substitute simple occlusion of the popliteal vein to produce the same effects. In six cases thus treated the extremities were seen to recover not only their warmth and colour without the development of oedema, but also a certain degree of hyperaemia of the feet and toes.

On these and other grounds it must be admitted that the balance of the collateral circulation is likely to be more efficiently maintained if the vessels which carry it on more nearly correspond in size and consequent equality in the blood pressure and rate of flow. The elimination, in fact, of the capacious main vein is a real advantage, since this for the time affords a too ready channel of exit for the diminished arterial supply as well as an undesirable reservoir for stagnation.

These considerations lead me not only to regard obligatory simultaneous occlusion of a main artery and vein as a negligible factor in the risk of gangrene of a limb, but to hold, further, that the procedure is preferable whether the vein be wounded or not. The result of the combined procedure being to maintain within the limb for a longer period the smaller amount of blood supplied by the collateral arterial circulation, and hence to improve the conditions necessary for the preservation of the vitality of the limb.

Effects of Military Service on Hunter Himself.

We may now turn from the question of how far the work of John Hunter has influenced that of the military surgeon of to-day, to that of how his experience gained in the field may have influenced his own life's work.

Hunter was emphatically a student of nature; his early years were, as we know, spent mainly in the fields around his home, where he sought out such secrets as he could from his surroundings. This fallow period, while responsible

for depriving him of a facile pen and literary style, yet, no doubt, opened his mind, developed habits of thought and observation, and affords some explanation of the superhuman task to which he set himself with such devotion in the later periods of his life.

The whole world was his book, and it is of some interest, in passing, to contrast the character of his upgrowth and surroundings with those of his greatest successor, Joseph Lister. Hunter gained his earliest inspiration from the limitless field of nature with naked eye and unbridled freedom. Lister, born into a home the cradle of the modern microscope, passed through a blameless career at school and college in a continuous atmosphere of scientific thought and investigation. Both great men devoted their whole energies to the cultivation of science throughout a busy and industrious life—Hunter throughout with a yearning for the pedestal, Lister concerned only with the success of his labours.

Hunter died in the midst of an incompleted and impossible task, while Lister had the incomparable satisfaction of witnessing the success of his own efforts, the goal reached, and the benefit to mankind immeasurable.

Each illustrious man, however, perhaps found his proper field. Hunter in a life of continuous stress, immoderate labour, a struggle for his daily bread and the means to pursue his researches, and a tragic death not unsuited to the fiery nature of the man. Lister, in a more equable existence, spent in steady and industrious pursuit of the one great object he had in view, and, after attaining a success duly appreciated by the whole world, passing quietly away in the zenith of his fame.

The abrupt change from a boyhood of untrammelled freedom to the life of a hard-worked demonstrator in a school of anatomy, than which no greater contrast can be conceived, laid heavy hands on Hunter; his health began to fail, and hence his transit to the field of war.

To join an army in the field is to enter the most intimate school of human nature. The most admirable features of man's character and the meanest are alike displayed. Unsuspected strength is revealed, long concealed weakness exposed, and in a year's campaign the events of a whole lifetime of ordinary existence may be passed through. Hunter entered this school at a turning point in his career after two periods—the one of comparative idleness, the second of drudgery; and little doubt can exist as to both the sobering and inspiring effect it had upon his nature. As a result of his experiences he emerged a stronger and a better man, with a vastly wider outlook on the world, and doubtless capable of forming a juster estimate of his own powers and capacity to undertake the line of life for which he felt himself to be fitted.

The life of a military surgeon on active service, however, offers advantages beyond the mere acquisition of worldly wisdom and a knowledge of men. An army is not always fighting, and the surgeon between periods of active and unceasing work has intervals of quietude which are rare in any other path of professional life. Freedom from the cares of ordinary business and the manifold duties of practice allow uninterrupted opportunities for following out lines of thought and the prosecution of research. There can be no doubt Hunter utilized these opportunities to the utmost, for throughout his writings references are made to observations and investigations made during his period of service. He tells us, in fact, that his most comprehensive and complete contribution to scientific literature—the *Treatise on the Blood Inflammation and Gunshot Wounds*—was the direct produce of the experience gathered at that time. The long period which elapsed between the conception of the work and its publication is characteristic of Hunter's method—a method founded on the desire to complete his knowledge on any subject before submitting himself to public criticism; a method desirable in itself, but when adopted by a man whose aims are of the scope of Hunter's, too often, as in his own case, robs the world of receiving the benefits of a wealth of critical observation and knowledge, which passes together with its owner to the grave.

While considering the opportunities of research his military life afforded to Hunter, one cannot help comparing them with those enjoyed by the present generation.

During this campaign laboratories, both of the clinical type and those fitted for more extensive research, have been provided not only for the base hospitals but also in connexion with the casualty clearing stations, which have performed so much of the duties of stationary hospitals near the front. A number of active young observers have been engaged in a research on every problem which the wounds and diseases of the soldiers have raised, and it may be confidently expected that a weighty harvest of new facts will have been garnered when opportunity arises for their collation and digestion.

The pathological anatomy of the lesions produced by gunshot injury to the brain, the spinal cord, the lungs, heart, and the abdominal viscera has been worked out to an extent that will leave little to desire.

New facts regarding cerebral localization and the functions of the spinal cord have been noted, while others founded on animal experiment alone have been confirmed by injuries comparable to the knife of the physiologist. Observations regarding the fevers of the field have been accumulated, an enormous practical experience of the value of the protective inoculation for enteric fevers has been acquired, while the prophylactic value of tetanus antitoxin and its influence in modifying the character of a subsequent attack has been placed beyond the region of doubt. It is not perhaps too much to expect that not only the acquisition of this extended knowledge, but also the manner of its acquisition, will exert an enduring influence upon the workers to whom we are indebted for it, and a resulting benefit will be conferred upon the community as a slight return for the misery and suffering which has been imposed upon the present generation.

May we not hope that many of the workers may be influenced as John Hunter was, and remain to the end of their careers active searchers after and exponents of the secrets of Nature, as well as better practitioners of medicine?

Many of my predecessors have striven with a varying measure of success to portray Hunter as a man and member of society; yet, the strange paucity of material at command appears to render any estimate of his personality from this point of view incomplete and uncertain.

I prefer to ask my audience to study his presentment as it hangs upon the wall before us, and from its inspiration to try and form a true conception of the man and the soul that was within him.

The concrete labour of his hands is still exhibited within these walls, while the germs contained in his writings have served to incite and direct the minds of the many searchers in the wide field of biology who have followed in his footsteps. If but one lesson could be learnt, the secret of his untiring industry, and this pressed home on those whose privilege it is to follow in his path, great indeed might be the result to mankind. The problems that to-day await solution are no less numerous or less vital than those John Hunter sought to unravel, while the constantly increasing means of investigation at command lay a growing responsibility upon the student.

The memory of John Hunter is fresh within these walls, and it is still green without, and I cannot, perhaps, better close this unworthy effort to sustain that memory than by quoting the words of one of his bitterest foes regarding the period of Hunter's life immediately following his return from the wars:

"During this time he found himself at leisure for meditating plans of life that plainly denote an intrepidity of mind and a vigour of application which, natural obstacles unsurmountable by most, could not suppress in him; (plans) which few have attempted although supplied by the completest aid of academic learning."[28]

Mr. President, posterity has judged how far Hunter succeeded in his aims, and has within the walls of this College awarded him a standing memorial which would, I think, have satisfied the man himself.

REFERENCES.

[1] S. Paget, *Life of John Hunter*, p. 75. [2] Guthrie, *Commentaries on Surgery*, p. 5. [3] Palmer, *Works of John Hunter*, vol i, p. 495. [4] Vol. iii, p. 353. [5] Vol. iii, p. 239. [6] Vol. iii, p. 260. [7] Vol. iii, p. 407. [8] Vol. iii, p. 369. [9] Vol. iii, p. 369. [10] Loc. cit., vol. iii, p. 545. [11] Loc. cit., vol. iii, p. 543. [12] Loc. cit., vol. iii, p. 549. [13] Vol. iii, p. 550. [14] Loc. cit., vol. iii, p. 552. [15] Loc. cit., vol. iii, p. 239. [16] Loc. cit., vol. iii, p. 260. [17] On the Principles of Antiseptic Surgery, *Virchow's Festschrift*, 1891, vol. ii, p. 344. [18] Loc. cit., vol. ii, p. 358; An address on the antiseptic management of wounds, 1893. [19] Loc. cit., p. 161: A method of antiseptic treatment applicable to wounded soldiers in the present war. [20] Loc. cit., p. 331: Notes on the double cyanide of mercury and zinc as an antiseptic dressing. [21] Loc. cit., vol. iii, p. 260. [22] BRITISH MEDICAL JOURNAL, 1916, vol. i. p. 685 [23] Loc. cit., vol. iii, p. 604, Case 3. [24] Loc. cit., vol. iii. p. 581. [25] Reports on the Surgical Cases noted in the South African War, 1899-1902, Surgeon-General W. F. Stevenson. [26] K. Saigo, Traumatische Aneurysmen in japanisch-russischen Kriege, *Deutsch. Zeit. f. Chir.*, Bd. 85, 1906, S. 577. Leo

Bornhaupt, Gefassverletzungen und traumatische Aneurysmen in russiche-japanischen Kriege, *Arch. f. klin. Chir.*, Bd. 77, 1905, S. 590. [27] *Zentralbl. f. Chir.*, vol. ii, 1913, SS. 1241, 1242. [28] Jesse Foot, *Life of J. Hunter*, p 82.

ROTATION OF THE LIVER ON ITS VERTICAL AXIS.

BY

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ON June 23rd last I was asked by my colleague, Dr. Hebblethwaite, to perform cholecystotomy for the removal of gall stones on a female patient of his, aged 33, in the hospital. The history and symptoms were the usual ones in a case of this kind, and the physical signs gave no clue either by their presence or absence of the difficulty that was shortly to be encountered. There was tenderness and rigidity of the right upper rectus and pain on pressing the twelfth rib about an inch from the spine.

On opening the abdomen in the right upper semilunar line by the usual gall bladder incision, which discloses the liver in its upper third, on this occasion the liver could not be seen until a fold of peritoneum which covered it and separated it from the diaphragm and upper abdominal wall had been lifted up. The hand was then introduced to explore the gall bladder, but no gall bladder was to be felt or seen, the only thing that bore the remotest resemblance to it was soon found to be the lower pole of the right kidney, which therefore must have been projecting forwards unduly. I then passed my hand up to the transverse fissure, but I could not find the foramen of Winslow, and though I could identify the anterior pillar and its contained structures, the common bile duct, the hepatic artery and portal vein, yet the "feel" of it seemed in some indefinable way to be not quite normal. There was nothing left to do but to trace the edge of the liver both ways; towards the left nothing could be identified the whole way round; towards the right I came upon the liver notch in a position corresponding to the anterior axillary line. Here was something definite at last. The fold of peritoneum which covered the edge and upper surface of the liver was found to be tied down at this notch and so was identified as the suspensory ligament, and this was confirmed by tracing its free edge to the umbilicus; its attachments to the diaphragm occupied the normal position. On tracing the edge of the liver further round still I came upon a small flaccid sac containing calculi suspended hammock-like by a mesentery from the under surface of the liver in a position corresponding to the posterior axillary line and in front and to the outer side of the upper part of the right kidney.

The riddle was now almost solved: the liver had rotated on its vertical axis through an angle of approximately 90 degrees; the lobe opposite the incision and covered by the suspensory ligament was the left with the characteristic omental tuberosity on its under surface, and the quadrate lobe, instead of being opposed to the abdominal wall between the mid and right semilunar lines, was related to the right hypochondrium between the anterior and posterior axillary lines. It was impossible to see the gall bladder through my present incision, though it extended from the margin of the ribs to opposite the umbilicus. I tried to rotate the liver back again to its normal position, grasping it with both hands to make the attempt, but I found that it was immovably fixed in this position, nor could the gall bladder be made to present in the incision. I therefore made a transverse incision at right angles to my first incision back as far as the mid axillary line. The gall bladder could now be opened in the corner of this incision, and I evacuated eighty-one small calculi. A tube was put in and brought out at the same place.

The patient made an uninterrupted recovery.

I regret that the condition of the patient after the transverse incision was made permitted us to do very little more than complete the operation we set out to do—namely, to relieve her of her gall stones—otherwise more time would have been spent in examining the relation of the liver to the neighbouring organs and viscera. I did make another attempt to pass my finger through the foramen of Winslow, but was no more successful. The stomach, pylorus, duodenum, and hepatic flexure of the colon seemed to occupy their normal positions, and the liver seemed to be of the size to be expected in a female patient. The gastro-hepatic omentum seemed to be more superficial than is ordinarily the case, but I made no examination of the cardiac orifice of the stomach.

It is, I think, significant that the rotation of the liver is from left to right, and through the same angle, namely, 90 degrees, that the stomach and duodenum rotate early in fetal life, and at first it was a tempting theory to suppose that it took place at the same time.

In the meantime, however, I have had the benefit of a note from Professor Arthur Keith, who has set me right on this matter. It appears that this rotation is an extreme degree of prolapse of the liver, occurs only in women, and in women over 30 years of age. It is usually accompanied by evidence of visceroptosis. My patient was certainly on the spare side, and was such a patient as one would not be surprised to find a movable kidney in, but the right kidney, at any rate, was fixed with its lower pole projecting forwards under the liver. The only other evidence of visceroptosis was the gall bladder mesentery, which was about an inch long.

THE EFFECTS OF CINEMATOGRAPH DISPLAYS UPON THE EYES OF CHILDREN.

BY

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THE following observations refer only to the direct effects of the cinematograph display upon the eyes, and ignore indirect effects that may be held to arise from undue excitement, confinement within a place the atmosphere of which may be injurious, and the fatigue caused by the late hours at which children attend exhibitions.

In general, it may be said that the effects on the eyes of children do not differ from those experienced by adults. There are few, if any, adults who do not experience some annoyance, very many of the more sensitive or impressionable feel considerable strain; children may be taken to be in the same class as the more impressionable of adults, owing to their lesser power of resistance and readier experience of fatigue.

The unpleasant effects associated with the cinematograph exhibition, so far as they affect the eyes, are due to the following conditions: (1) Glare; (2) flicker; (3) rapidity of motion; (4) concentration of attention; (5) duration of exhibition.

Some of these conditions are peculiar to the cinematograph, others are found in the same or some degree in other optical exhibitions. But none of them are natural, and the more they depart from the conditions of natural phenomena the greater is the adverse influence on the eyes.

1. *Glare.*

Though the human eye has a wonderful power of adapting itself to varying conditions of illumination, it is wellnigh incapable of adapting itself to a single light in a dark place. The light may be feeble, but if the space in which it is exhibited be dark, it will be relatively intense, and therefore irritating to the eyes.

These conditions are found exemplified in the highest degree in all optical lantern exhibitions. To enhance the effect of the show the room is made as dark as possible, the light of the lantern as bright as possible, and the transparency as strong as possible. The light from the lantern is projected on to the whitest possible screen, and therefrom it is reflected directly into the eyes of the observer. All these necessary conditions of the show are bad conditions for the eyes; they all tend to produce the maximum of fatigue. The effects of glare are further intensified in the cinematograph show by the programme screens shown between the films. These slides are often far too brilliant in the contrast between the white print and the dark background; particularly bad are the impromptu slides made by scratching the writing on a screen of coloured gelatine. These slides should be prepared so that the contrast between the print and the background is the smallest necessary for visibility. In a

few badly managed shows there are occasions when the film is entirely withdrawn from the lantern. Then the watchers are exposed to the full glare of the reflected light of the lantern.

Glare cannot be dissociated from the shows. It can be reduced by providing a sufficient illumination of those parts of the room or hall removed from the immediate region of the screen; by attention to ordinary details connected with the use of fixed slides; and by care in the degree of illumination of the hall during the interval.

2. *Flicker.*

Most people will acknowledge that the flicker of the cinematograph is peculiarly irritating. Flicker is of two kinds. First, there is the effect of the rapid change of the moving film. Sensitive people—those whose "reaction time" is high—appreciate this more than those whose senses are duller. The effect is irritating according to the slowness of the flicker. The more rapid the change of the film, the less is the effect upon the eye; if the film can move at a rate slightly greater than that at which the keen eye is able to perceive variations of light, this sort of flicker will cease to worry. There is already a great improvement in the newer films and machines. The defect is most evident now in the coloured films, where attempts are made to give a natural colour to the scenes by the rapid alternation of different coloured films.

There is another kind of flicker due to bad films. Scratches and patches produce faults in the films which allow of the sudden exposure of the eyes to bright flashes of light; when these flashes follow in rapid and irregular succession, as in a badly damaged or worn film, all the irritable effects of flicker are intensified.

3. *Rapidity of Motion.*

This defect in the cinematograph is to some extent connected with the previous defect. With the intent to reduce flicker, films are moved though the machine at a rate greater than the natural rate of progress of events depicted. The eye has a habit of work, just as any other part of the body or the whole organism, and there is a resentment expressed in terms of fatigue when it is required to work at a rate different to the habitual rate. The defect in the film is most evident in those scenes which depict movement near at hand; when the scene is a distant one the variation in speed is little noticeable.

4. *Concentration.*

Work is arduous according to the concentration of effort. The cinematograph requires a concentration of attention greater than that necessary to follow any other kind of show, and the effort is a conscious effort. At the play there is sound as well as sight, and the sight to be seen is a slower moving scene in a full perspective and of solid proportion. The players have individual points of interest, in their persons and clothes; the eye wanders over these points at an habitual rate of work, and it is not unduly exhausted. At the cinematograph there is no adjuvant sound which carries on the sense of the screen when the eye is not engaged. For the whole duration of the scene the eye must be fully alert and constantly varying its condition according to the variation of illumination of the screen. Children are well aware of the difficulty of concentration of sight. They have a game of competition in concentration. Each tries to stare the other out of countenance without a blink of the eyelids. The one that blinks first loses the game. The effort required to refrain from blinking on such a short concentration of vision is some indication of the effort of concentration required to follow the cinematograph picture. Such a concentration of effort is quite unnatural, especially for children. Ordinarily the eye wanders freely over objects, the time of concentration on any one object is very short. One can gain some idea of the frequency of variation of movement of the eye by looking at some object in the sky near enough to the sun to cause the sensation of after-images of the sun. Although the eye was apparently engaged in looking fixedly at the object, the number of after images of the sun will prove that even for that short space of apparent perfect concentration it had moved several times.

5. *Duration of Exhibition.*

Cinematograph shows commonly last from one and a half to three hours. During that time, save for the short intervals, the eye and the mind are on the stretch. The attention of the child is not naturally capable or willing to concentrate for any but the shortest time. It is common knowledge with teachers that lessons to be effective must be short, and the shorter the more youthful the child. With a lesson longer than half an hour the attention of the small child flags, and the time is lost and the child tired. Conversely, if the attention can be forced by the thrill of the picture show for a longer period than is natural, the nervous effort is increased out of all proportion.

These are the main defects associated with cinematograph shows. Some of them are peculiar to this show, others common to it and other shows produced by the optical lantern. Some are remediable, others may be mitigated by an alternation of the exhibition with other kinds of entertainment. All of them may be reduced in intensity by shortening the duration of the show and preventing small children from attending two shows in direct succession.

Some other ill effects may be experienced according to the position occupied by the observer in relation to the screen. The "optimum" position is as nearly as possible in a line with the centre of the screen and as far away from the screen as thrice its full height. In this position and at such a distance the picture appears more natural than in any other. If the observer is too near all the defects of the film are exaggerated and the movements of head and eyes to cover the field of the screen are fatiguing. If the observer is too far to one side of the centre of the screen the distortion of the image thrown on the screen is great. If the observer is too far away from the screen the effort of concentration to catch the drift of the show is exaggerated.

It will be asked, What evidence is there that children's eyes suffer from the picture shows? The evidence is of such a nature that it cannot be presented by figures and percentages. It is difficult to answer the question whether permanent defect arises out of attendance at the shows. But there is a recent observation which I am inclined to think has some bearing on the point.

The examination of the case papers of a large number of school children, who have been referred to eye clinics on account of failure to pass the standard vision tests at the schools, shows that there is an increasing number of children who on examination at the clinic are found to have nothing the matter with them. At the school they did not pass the test; at the first examination at the clinic they did not pass the test; but when their eyes were examined nothing amiss was to be found, their eyes objectively were normal, or so nearly normal as to be quite capable of passing the standard test; at a later subjective examination they did pass the test satisfactorily. Several causes may be at work to account for these occurrences. The children may fail to appreciate what is wanted of them at the first test, but against this it is to be observed that the occurrences are not confined to the small children. The children may be "making game" of the matter to get a half holiday at the hospital; possibly this is so in a few cases. But by far the most likely cause is a condition of fatigue in the children so that at the time of the test they were incapable of putting out sufficient energy, either ocular or mental, to read the standard types. Every one is familiar with the fact that in a state of fatigue ordinary feats, easily accomplished in health, cannot be accomplished. In some cases I have ascertained that children of this sort were in the habit of going to picture shows, and it is possible the increasing attendance at these shows may be associated with the increase in the number of those children who fail at the vision tests without objective cause. If the normal-eyed children suffer, it is certain that the result will be more serious in those with defective eyes, and possibly lead to permanent aggravation of those defects.

The best protection for the child will be secured by the following provisions: (1) The reasonable illumination of all parts of the hall not directly beside the screen. (2) The improvement of the movement of the film so as to reduce flicker, and the withdrawal of films immediately they are damaged. (3) An improvement in taking the picture so as to bring the rate of motion of the objects depicted more nearly to the natural. (4) The increase in the number of intervals in the show, and the interposition of exhibitions other than that of the optical lantern. (5) The limitation

of shows for children to one hour, and the prohibition of "repeats." (6) The reservation of the children's seats to the "optimum" position in the hall.

With such provisions the indulgence in a show once a week should do no harm to the eyes of a normal child.

PUERPERAL FEVER TREATED BY VACCINE.

BY

RICHARD KAY, M.B.LOND.,

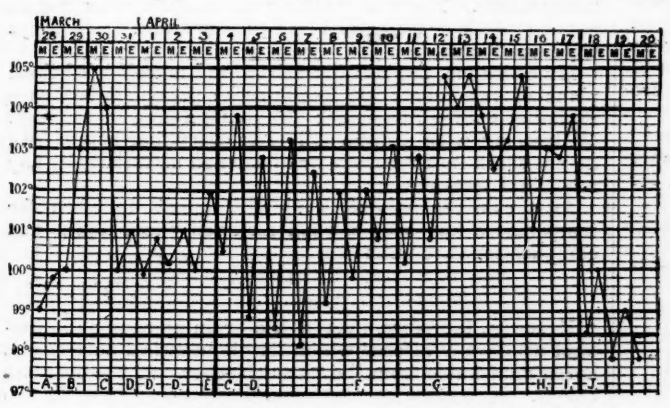
HARTLAND, NORTH DEVON.

THE following case may be of interest in connexion with that recorded by Dr. Grier in the BRITISH MEDICAL JOURNAL of September 30th, 1916, p. 454.

Mrs. H., a young primipara, was confined on March 27th. I had been called to see her three days earlier as she had an erythematous rash, without fever or other symptoms. It had almost vanished when she was confined, and there was no subsequent peeling. The head was at the vulva when I arrived, and I was told it had been there some time. The presentation was occipito-posterior unreduced. The child was born in half an hour, and there was a considerable tear of the perineum. The placenta was long in coming and was incomplete. While I was preparing to explore the uterus the patient, who was well and cheerful when the child was born, complained of faintness, and I found her pulseless. There was no marked external haemorrhage, and the uterus was contracted, but she was pale and restless and had sighing respiration. For two hours I tried to rally her, with no success. As she then passed a large clot, I gave chloroform and removed the rest of the placenta, which was lying loose at the internal os; the uterus was then douched and pituitary extract was injected; saline was injected per rectum and afterwards into the axillae, but with no result, and I left her six hours after the birth of the child still practically pulseless. Twelve hours later she had rallied; she was warm, her pulse was 120, and the temperature normal. She had an angry blister, the size of half a crown, on the left buttock, three or four inches from the vagina, and stated that she had felt some discomfort there for several days. To this I attribute the fever which followed.

Next morning she felt better, but had a headache; the pulse was still 120, the temperature was 99°. In the evening the temperature was rising, and the perineal tear looked sloughy. Remembering the rapid and possibly inadequate exploration of the day before, I explored the uterus again after cauterizing the perineal tear with carbolic acid. I found nothing, but caused a rigor.

Next day, as the patient was obviously worse, Dr. Pearson of Bideford kindly saw her with me; he also found that the uterus was empty. I then injected antistreptococcic serum,



A = Rigor; temperature not taken. B = Consultation. C = Serum, 30 c.cm. D = Serum 20 c.cm. E = Cough; serum, 30 c.cm. F = Urticaria. G = V.E. swab from cervix H = Measly rash; delirious. I = Polyvalent vaccine; negative phase. J = sweating.

with excellent results as shown by the chart, for a few days; the pulse came down to about 100, and the patient was indomitably cheerful. She then developed a slight cough, the temperature began to rise in the evenings and presented a septic character. A few days later the morning temperature also gradually rose, and she developed an urticarial serum rash, ten days after the first injection of the serum, and on the thirteenth day of the illness. The cough continued, but all that I could find was slight diminution of entry of air and diminished resonance at the base of the right lung; the breathing was not quickened. The perineal tear was clean, there was a slight discharge from the cervix, but no smell; the blister was still angry and painful. Aspirin had been prescribed for a few days, and afterwards quinine, and a vaginal douche was given twice daily.

When the urticaria disappeared and the morning temperature remained high, it became evident that the latter was not a serum phenomenon. Moreover the pulse began to rise above 100, and the patient lost her pluck. I was unwilling to put her to the expense of an autogenous vaccine, but I felt further delay would be dangerous. A swab was taken through a Fergusson's speculum, and this apparently caused a considerable increase in the fever. Three days later the Clinical Research Association reported that so far no virulent bacteria had developed.

On the twentieth day of the illness the patient developed a third rash which was measly in type and doubtless septic. In view of the negative bacterial report I tried to find an internal abscess, but failed, nor could Dr. Pearson discover anything of the kind. Next day the patient became delirious, and the Clinical Research Association reported that a few streptococci had developed and that they were sending a stock vaccine at once. The marvellous result of that stock vaccine, after a slight negative phase, is shown by the chart. The patient had a crisis and was well. The cough, never troublesome, cleared up. Only the obstinate sore on the buttock remained, and when the autogenous vaccine arrived and was injected that cleared up at once; evidently the vaccine was specific as regards the blister.

The patient, I think, must have had a low form of septic pneumonia, although the physical signs were never definite. A septic pneumonia does not usually end by crisis, but apparently the vaccine stimulated it to do so. The initial collapse was puzzling. In the absence of cyanosis and struggling for breath I hesitated to diagnose embolism of the lungs; perhaps there was some embolism of the heart, or a massive septic infection. There was a little more bleeding than usual, but not much. There were never any abdominal symptoms except slight tenderness over the uterus.

A CASE OF "TRENCH FEVER," CONTRACTED IN ENGLAND.

BY R. D. MACGREGOR, B.A., M.B.OXON.,

CAPTAIN I.M.S.(RETIRED).

THE case of "trench fever" here described is recorded because the patient has never been out of England, and has contracted the disease while in hospital in attendance upon cases of trench fever from France. As has been the case in a number of instances occurring abroad, the patient is an R.A.M.C. orderly.

Pte. A., R.A.M.C., has been employed for some months at this hospital as a ward orderly, and bears a good character. He is 54 years of age, and has had no serious illness except appendicitis, for which he was operated upon. He has never had rheumatism.

On August 30th, 1916, he had acute pain in his legs all night. For three days before this he had had some aching in the legs, but had carried on with his duties. On the morning of August 31st his legs were so acutely painful that he could not stand, and was brought to the hospital on a stretcher. The fronts of the legs were found to be very tender, the tenderness being most marked along the inner border of the tibiae. There was headache, and some tenderness and pain over the front of the thighs. The temperature in the evening was 100°; the next evening it was 101°, the symptoms continuing the same. On the fourth day the temperature came down to normal, and remained so thereafter, but there was little remission in the pain. He was not able to stand with ease until about the seventh day. In addition to the leg pains, headache was frequent, and pains began to be experienced in different parts of the body—transversely across the chest below the nipples, in the neighbourhood of the hips and of the shoulders. On November 5th there was pain, which he described as "cruel," in the left shin, but none in the right. There was pain also in the right shoulder. The pains were usually worse at night and in damp weather. Throughout the illness there were no pathological signs except the initial pyrexia.

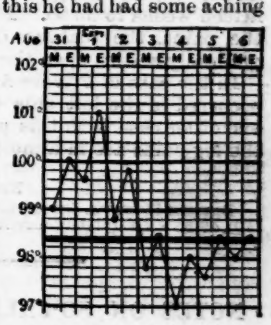


CHART 1.—Pte. A.; "myalgic" type of trench fever (contracted in England).

The case is fairly typical of the "myalgic" type of trench fever. Trench fever, as so far described, has no completely uniform character, but presents a symptom-complex easily recognized and divisible into a number of well-marked types. McNee, Renshaw and Brunt,[1] and Hurst[2] have described a "long" and a "short" type of

trench fever. To these Houston and McCloy[3] have added the "myalgic" type, as well as a "septicaemic" type.

The case described above belongs to the "myalgic" type, which in general characters is very similar to the other types, but differs in having a short duration of pyrexia with a long duration of the pains. The myalgic type and the "long" trench fever type in this hospital

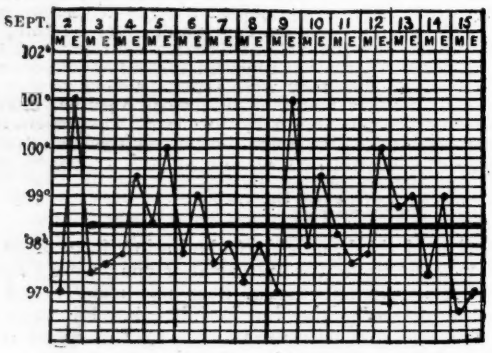


CHART 2.—Twelfth week of "long" type of trench fever.

differ only in the temperature chart, which in the first named shows only a few days' pyrexia, while in the second there is a course of low irregular pyrexia extending over many weeks, with occasional spikes rising a degree or two higher.

The "short" type of trench fever has not been seen in this hospital, possibly because such cases do not find their way over from France. The "septicaemic" type of Houston and McCloy has also not definitely been established here.

The various types merge into one another, showing the essential identity of the symptom-complex of trench fever. There is no catarrh nor definite joint pains, but a variety of exceptional symptoms may occasionally give rise to diagnoses of "gastralgia," "influenza," "rheumatism," etc.

The excessive duration of fever and pains in the "long" type and of pains alone in the "myalgic" type were at first a source of concern, because weeks went on without any end to the condition becoming apparent. The physical state of the patients seldom gave cause for anxiety, but no form of treatment appeared to effect a cure. The passage of time, however, has shown that the most obstinate case finally yields, though the longest case took as many as fifteen weeks to do so. There is a gradual amelioration of the pains, the malaise disappears, and the temperature gradually settles upon the normal line.

In the case of Private A., given above, the pain latterly occurred in the left shin only. This is exceptional, only one other case with this peculiarity having been seen, for the leg pains are in almost every instance bilateral.

REFERENCES.

[1] BRITISH MEDICAL JOURNAL, February 12th, 1916. [2] *Lancet*, October 14th, 1916. [3] *Lancet*, October 7th, 1916.

NOTES ON SO-CALLED "TRENCH FEVER" AS SEEN IN ENGLAND.

BY

JEFFREY RAMSAY, M.D.LOND., B.S.,

CAPTAIN R.A.M.C.(T.),

EAST LANCASHIRE CASUALTY CLEARING STATION.

THERE is much similarity between so-called "trench fever" and a short pyrexia which is prevalent at present among the troops in England.

The signs and symptoms of "trench fever" were described recently[1] in an able article by Captain J. Muir, R.A.M.C.(T.). On reading his remarks, the medical officers of this hospital said to themselves: "Here is a description which tallies almost exactly with the cases which we are admitting daily from a large camp here in England—cases which have not been overseas at all. Are we justified in calling our cases 'trench fever'?"

Between October 1st and December 31st, 1916, the number of cases admitted to our wards from the neighbouring camp with a diagnosis on their sick reports of either influenza or pyrexia was 199.

Of those men who were under my care, all had, to a greater or less extent, symptoms associated with pyrexia from any cause, such as headache, pains throughout the body, and a general feeling of "rottenness." But (and this is what I wish to emphasize) many of them showed the two principal features which Captain Muir mentions as differentiating the cases from influenza—namely: "(1) The absence of any symptoms of catarrh in the respiratory tract (or elsewhere); and (2) the absence of all complications such as so commonly follow attacks of influenza."

The average temperature of the cases on admission was 102°. In nearly all it fell to normal within thirty-six, or at the most forty-eight hours. As Captain Muir points out in the overseas cases, the sooner a man is taken to hospital after the onset of the attack the sooner will his temperature fall. Here we are exceptionally fortunate in the facilities for rapid and comfortable transport.

Our cases showed no constant remission on the third or fourth day, though in some the temperature did not settle completely until a few days had passed. This is the only particular, and it is a very slight one, in which our cases show any difference from the cases recorded from overseas.

The cases which were investigated fully were taken from those which showed no catarrh of the respiratory tract (or elsewhere), so as to exclude from our survey those that might be diagnosed rightly as influenza.

Of the cases so investigated, nasal and pharyngeal swabs showed, in one case only, the presence of a large number of influenza bacilli. In the remainder we found many of the usual organisms associated with the naso-pharynx (*M. catarrhalis*, pneumococcus, Friedländer's bacillus, Hoffmann's bacillus, etc.), but no organism was found to be present constantly in all the cases.

Most of the men showed a considerable leucocytosis at the beginning of the attack—from 18,000 to 21,000, or even higher, was not uncommon. Differential counts showed a constant tendency to increase in the polymorphonuclears. A usual feature was the continuance of leucocytosis for at least twenty-four hours after the temperature had fallen.

The pulse-rate showed great variability, and was not constantly increased, or diminished, in proportion to the temperature. There is nothing to remark with regard to the systolic or diastolic blood pressure, and the kidneys were unaffected.

My colleague, Captain Crawshaw, and myself tried three plans of treatment: (1) Keeping the patient in bed on a milk diet without medicine; (2) giving a dose of calomel; (3) treating with sodium salicylate every four hours. We do not think that recovery was hastened materially by any medicinal treatment.

As a rule the patient is allowed to get up when the temperature has been normal for twenty-four hours, and complications are unknown.

SUMMARY.

It seems, therefore, that in the training camps of England we have a disease which for all practical purposes is indistinguishable from the "trench fever" of the overseas troops. It occurs in men who have never been in the trenches, and who are not infected with lice. Captain Muir has laid stress on the fallacy of the term "trench fever." The army authorities, like the relations of a patient in private practice, wish for an exact diagnosis of every morbid condition, and it should be our business to see that the diagnosis is as accurate as is possible. In the present state of our knowledge (or ignorance) it seems to me that the term "short fever" is the most honest title to give to the condition to which I have referred in the above notes. It is quite as accurate as "scarlet fever"; neither term implies a knowledge of the causative agent. And if it rings the death-knell of the indiscriminate use of the word "influenza," it will have rendered a service to medicine.

I am much indebted to Miss Hubbard, of the hospital laboratory, for help in the preparation and examination of specimens.

REFERENCE.

[1] BRITISH MEDICAL JOURNAL, November 11th, 1916.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE APPLICATION OF SURGICAL METHODS TO THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.

I DESIRE to suggest the application of surgery in the treatment of cerebro-spinal meningitis. Up to the present its partial application is universal, that is, by intermittent tapping, and this, if a reasonable flow takes place, is always followed by some amelioration of the patient's condition, even if it be only temporary. This alone seems to me prima facie evidence of the advantage of getting rid of the infected fluid, more especially as the symptoms of toxaemia and pressure only reappear on the reaccumulation of the fluid. In the majority of cases a certain amount of serum is introduced with the object of combating the injurious influence of the toxic material, but from the evidence adduced, it does not appear that this is more effective than simple tapping without it.

As all agree that the tapping is essential, and as it has to be repeated a number of times, each time with temporary benefit, may I suggest that a large amount of suffering and trouble migh be avoided by using continuous aseptic drainage? the cannula would need to be especially strong and would be protected by a shield, and the flow could be regulated to suit the case. I would suggest the application of continuous drainage for "simple" cases.

There remain those cases in which the flow is at first enough in quantity and then becomes insufficient, whilst the symptoms become aggravated, or those in which the flow is from the first purulent and too inspissated to flow at all—those cases, in fact, to which the treatment of tapping, let alone injection of antitoxin, is impossible. They are the unfavourable ones and practically supply most of the deaths. It is these cases to which I think surgery could be applied with advantage—where, in fact, partial laminectomy might be done, for the purpose of direct drainage and perhaps lavage with saline, in order to establish a flow of spinal fluid which has been interrupted by adhesions.

I cannot understand how a small amount of antitoxic serum injected into the spinal canal after draining off a certain amount of spinal fluid can even reasonably be expected to counteract the evil effect of a more or less completely contaminated cerebro-spinal fluid, which it cannot even reach unless forcibly injected in quantity sufficient to produce dangerously injurious pressure.

But drainage, even imperfect drainage, has been proved to be beneficial; therefore I venture to press that perfect drainage would be even more satisfactory.

I hope by this note to direct the attention of those interested in the treatment of cerebro-spinal meningitis to the possibilities offered by surgery towards diminishing the death-rate in this disease, especially in affording a chance of rational treatment to those desperate cases which, without its aid, apparently must succumb.

H. V. DREW, F.R.C.S.,
Captain R.A.M.C., Tidworth Military Hospital.

LATE TETANUS.

PRIVATE A. M. was wounded on October 22nd, 1916, on the Somme, by shrapnel, in the posterior axillary line, left side, and received prophylactic injection on that day and on October 30th. On November 22nd there was slight rigidity of the left arm. On December 8th he was sent on leave, the wound being completely healed. On December 15th he returned to duty, and was fit and well, except for some bronchial catarrh and slight rigidity of the left arm.

On January 5th, 1917, he complained of pain in the head, and was admitted to Dunfermline Auxiliary Hospital on January 9th. On the 11th, when seen by the inspector of tetanus, he had retraction of the head, pain and stiffness in the muscles of the neck, and trismus was moderately marked. The knee-jerks were exaggerated, but there was no ankle clonus. There was slight arching of the back and difficulty in swallowing, and persistent cough and sputum. Antitetanic serum 3,000 units was given intrathecally, 1,500 units intramuscularly. The injections were repeated next day. He died on the morning of January 13th.

Post-mortem examination showed evidence of chronic alcoholism and bronchopneumonia of both lower lobes. Cause of death, pneumonia *plus* tetanus poisoning.

This case emphasizes the necessity for medical officers being on the look-out for local rigidity and contraction of limbs in relation to wounds, however late these signs may be in appearing. If the rigidity is not otherwise accounted for, it is an indication for immediate antitetanic treatment.

JAMES MILLER, Captain R.A.M.C.,
Inspector of Tetanus, Edinburgh.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

BATLEY AND DISTRICT HOSPITAL.

GANGRENE OF SMALL INTESTINE: LAPAROTOMY: RECOVERY.

(By W. AIRLIE OGILVY, L.R.C.P. and S.Edin., Surgeon to the Hospital.)

MRS. G. W., aged 34, was admitted at 12 noon on May 22nd, 1916, suffering from acute and constant pain across the lower abdomen. She stated that she had had no previous illness, had been married eight years, and had one child five years old. Her family history was excellent. She had been suddenly seized with severe intermittent pain across the lower abdomen at 2 p.m. on May 21st. When seen at 7 p.m. she was in the knee-chest position in bed in a paroxysm of pain. The pulse was 75, the temperature normal; there was some tenderness and the abdomen was rather rigid. She had not vomited; the bowels had acted once during the afternoon. She was in the third month of pregnancy and had seen a little blood. She thought she was aborting. The uterus was less movable than normal; the external os was closed and patulous. Morphine gr. $\frac{1}{3}$ was given hypodermically.

Next morning she stated that she had had a fairly comfortable night, but had not slept much. The pain was returning and was more constant in character; the abdomen was rather distended and more tender than before and very rigid; the pulse was 90. She was removed to hospital forthwith.

At 3 p.m. the abdomen was opened in the middle line below the umbilicus. On opening the peritoneum a small quantity of blood-stained fluid escaped and a coil of distended gangrenous bowel presented. On enlarging the opening in the peritoneum, a second and a third coil presented in the same condition. They proved to be about the junction of jejunum and ileum. A large calcareous mesenteric gland, as large as a bantam's egg, was found, from which a very short, thick band extended to the mesenteric attachment of the bowel, causing a very acute kink at the distal end of the distended bowel. The gland and 3½ ft. of bowel were removed, a side-to-side anastomosis made, and the abdomen closed.

The patient made an uninterrupted recovery, but aborted on the eighth day after the operation. In ten weeks she was doing her housework and feeling in excellent health. Previously her bowels were rather constipated, now they are perfectly regular.

I am indebted to Dr. Eley for his able assistance at the operation.

A CHAIR of oto-rhino-laryngology has recently been founded in the University of Geneva. Dr. Amédée Pugnat has been appointed professor.

A NEW monthly periodical entitled the *American Review of Tuberculosis* is to be published by the (American) National Association for the Study and Prevention of Tuberculosis. The first number will appear in March.

AT its annual general meeting held on November 26th, 1916, the medical syndicate of the Seine department decided that in future medical fees should be increased by 25 per cent. for all persons whose resources had not been diminished owing to the war.

Reports of Societies.

NAVAL MEDICINE IN THE GREAT WAR.

AT a meeting of the Medical Society of London on February 12th, the President, Lieutenant-Colonel D'ARCY POWER, being in the chair, Surgeon-General H. D. ROLLESTON gave an address on this subject.

After describing the manner in which the medical service of the navy had been expanded, and the arrangements for the transport of wounded and sick, he discussed the health of the navy during the war. The shore dépôts and training establishments had proved more liable to epidemic disease, owing to contact with the civilian population, the influx of new entries, and the massing together of youths in the boy training establishments. Out of 274 cases of cerebro-spinal fever during the first two years, 252, or 92 per cent., occurred on shore.

The Service Afloat.

The general health of the Grand Fleet had been extremely good. The average daily percentage of sick in the whole fleet in 1913 was 2.37 and in 1914 2.03. Since the beginning of the war the rate in the Grand Fleet had been almost always under 1 per cent. It would have been even less had it not been for the higher rate of sickness among the reservists and pensioners. Most of the sickness was of a minor character, such as seasonal influenza and boils. An interesting point was the severity of measles among the Shetlanders, both in the fleet and among the reservists at Lerwick, where there was a severe epidemic early in 1915. In ordinary times measles was rarely seen in the Shetlands, but when introduced an epidemic resulted. He had seen a relapse of measles in a Shetlander on the twenty-eighth day of the disease—an extremely rare event. No case of small-pox occurred in the fleet. Small outbreaks of enteric fever in three ships were traced respectively to infected oysters, to a carrier, and probably to contaminated water taken on board at Montreal.

In the Eastern Mediterranean Squadron during August, October, and November, 1915, almost every ship was attacked by epidemic gastro-enteritis, which died down in December, 1915. There was a fair number of cases of typhoid, paratyphoid, and dysentery between August and the end of December, 1915. The dysentery was mainly amoebic, and in many cases associated with jaundice. The infection was probably conveyed by flies and by men returning from the beach. The health of the Adriatic Squadron at this time was excellent, and the average daily sickness for the whole Mediterranean Fleet from August 15th, 1915, to October 31st, 1915, was 2.24 per cent., and from November 1st, 1915, to January 31st, 1916, 1.52. From February 1st to April 30th, 1916, the health was even better, with a daily percentage of 1. Between May 1st and July 31st, 1916, it rose slightly to 1.14 per cent. Sandfly fever was prevalent in Salonica in May, and appeared in some of the ships in the Eastern Mediterranean, and at intervals cases of paratyphoid, dysentery, and malaria occurred. In the quarter ending October 31st, 1916, the daily percentage of sick was 1.08; dysentery and malaria were less frequent, and typhoid and paratyphoid rare. No cases of beri-beri had been reported. During August and September, 1915, there was an extensive epidemic of dengue at Bermuda, but the average incidence of the disease in men-of-war there was 3 per cent. only. Meagher's observations there supported the view that the disease is spread by mosquitos. The good bill of health of the fleet as a whole was due to (1) the comparative isolation of the fleets, and especially of the Grand Fleet. (2) The quarantine precautions in drafting from the shore establishments to the fleet. (3) The lectures given by the medical officers to the ships' crews on personal hygiene, dealing especially with the dangers of venereal disease and alcoholic excess. These appealed to the common sense of the men, and, as an illustration of their good effect, on the return from leave of the men (about 1,100) of one great battleship there were only three cases of gonorrhoea and one of syphilis. (4) Measures—such as regattas, boxing competitions, entertainments, lectures, and cinemas—to mitigate the effects of monotony entailed by awaiting events. (5) Improvement in the ventilation of the ships.

Large numbers of reserves had necessarily to be passed rapidly into the ships during the first few days of war, and a certain proportion of unfit slipped through. The incidence of sickness was therefore much higher in the Royal Naval Volunteer Reserve and Royal Naval Reserve than in the Royal Navy. Cases of failure of cardiac compensation, of relapses in pulmonary tuberculosis, and of diseases which had previously led to discharge from the service were not infrequent, and dental caries and insufficiency extremely common. He had seen ten fatal cases of malignant endocarditis and one of malignant aortitis, chiefly in reservists and pensioners. The numerous new entries, mostly quite young, provided a favourable soil for infectious diseases, such as measles, rubella, scarlet fever, mumps, and cerebro-spinal fever. Outbreaks occurred, but it was remarkable that there was so little illness. The effect of long continued strain in activating latent disease, such as tuberculosis or heart disease, was seen, and it precipitated tabes and general paralysis in some syphilitic men. Exophthalmic goitre, as during the siege of Paris, and during the Boer war, seemed to have become more frequent. Over-excitation of the ductless glands might result from excitement or toxaemia due to acute infections, and while all the ductless glands might be affected it was possible that only that of the thyroid had been detected. The prolonged monotonous strain favoured mental deterioration, psychasthenia, and neurasthenia, and the short interludes of acute stress and excitement might precipitate an acute breakdown with violent though transient symptoms and delusions. With the prolongation of the war the results of continuous and monotonous strain had not become more noticeable to anything like the extent which might have been expected. This was due to the fine spirit of confident superiority in the men and the hygienic measures. The effect of good *moral* in preventing mental disturbance was seen in the freedom of the men from these manifestations after the Jutland battle.

As compared with land warfare, the large number of men killed outright in naval actions was striking. The treatment of wounds by new antiseptic applications had been advocated by Sir Watson Cheyne (borsal), who also investigated Dakin's antiseptic, and a green spray of mercury perchloride and malachite green had been used with success at Haslar. Burns formed at least a third of the casualties in action and fell into two groups: (1) General and severe burns due to the ignition of our own cordite or to burning furniture. Destruction of the tissue was deep, the immediate mortality high, and sepsis and deformity prone to occur. (2) Burns of the skin of the face and hands due to the momentary flash of high explosives in a confined space. From instinctive closure the eye escaped, and the thinnest covering, if not inflammable, almost completely protected the skin. Picric acid proved most efficacious in the early stages, but subsequently moist and mild antiseptics were found to be more suitable. The new treatment by paraffin spray was now officially provided. Shock, even with slight injury, was found to be excessive. To obviate it, $\frac{1}{2}$ to $\frac{2}{3}$ gr. of morphine, hypodermically, proved a sheet anchor. The sublingual method of administration was not satisfactory. The most powerful factor in the production of "gassing" was nitrous oxide. The symptoms usually came on after an uneventful interval, during which the NO and NO_2 were possibly oxidized to nitric acid, which accounted for the acute irritant effects on the respiratory tract. Severe headache and vomiting were followed by cough, husky voice, dyspnoea, and cyanosis, which became progressively worse, rapid respirations reaching 80 or more, restlessness, pain and tightness behind the sternum, orthopnoea, frothy, sometimes blood-stained, expectoration, and oedema of the lungs. Prophylactic treatment was quite effective, and consisted in the immediate application of a respirator containing cotton waste soaked in the usual soda solution. The treatment of the declared condition was unsatisfactory. Atropine did not appear to have been successful. Some benefit had been ascribed to brandy, the production of vomiting, and the repeated administration of aromatic spirits of ammonia. He had seen three cases of CO poisoning among men employed in putting out a fire in the bunkers of a collier. Delayed pneumonia, three weeks after immersion, was noticed by Deputy Surgeon-General H. W. G. Doyne in some cases after the sinking of the *Cressy*, *Pathfinder*, and *Hermes*. Appendicitis was by no means uncommon. There was a decided percentage

increase directly after the battle of Jutland among the sick from the engaged ships.

The Royal Naval Division.

The naval forces had been exposed to the same infections and diseases as the armies with which they had been associated. Diseases due to infection through the alimentary canal—diarrhoea, typhoid, paratyphoid, dysentery, and jaundice—levied a heavy toll in Gallipoli. Diarrhoea was so frequent that it was regarded as an incident rather than as a cause for going sick. As it was common when sandstorms prevailed it was called sand diarrhoea, but was probably not due entirely to mechanical irritation, but also to micro-organisms conveyed in the sand to the food; flies may have acted as carriers in the infection of food. Emetine and antidysenteric serum had given very satisfactory results in dysentery. Emetine was freely given, and in some instances the question arose whether subsequent palpitation, breathlessness, arrhythmia, and precordial pain were due to the infection, excessive smoking, or emetine. Other bad effects of this successful drug—peripheral neuritis and chronic diarrhoea, with or without blood—were to be distinguished from recurrence of dysentery. On the other hand, it might be responsible for the rarity of hepatic abscess. Bacillary dysentery was found to be more often—in the proportion of eight to one—due to Flexner's bacillus than to Shiga's, as judged by the serological examination of convalescent cases. Antityphoid inoculation had been fully justified by results. Much bacteriological work was necessitated in the testing of patients sent home for intestinal diseases in order to prevent the escape of carriers into the general population. Epidemic jaundice, apparently imported from Egypt, was common in Gallipoli at the end of 1915. There was no evidence that it was due to catarrhal jaundice in epidemic form, to dysentery, or enteric fever. The suggestion that it was due to paratyphoid had not been substantiated. Hurst regarded the disease as an acute infection of the duodenum, which, therefore, should be treated with the same precautions as enteric fever. A form of peripheral neuritis, clinically identical with beri-beri, occurred in Gallipoli and Mesopotamia. The usual explanation—the absence of the specific vitamine—presented difficulties, but Willcox, who noticed that it was often preceded by jaundice, supported the deficiency hypothesis by explaining that the diet suitable for jaundice, diarrhoea, dysentery, and paratyphoid contained very little, and that tinned food was almost devoid of the anti-beri-beri vitamine. Other fevers occurred in Gallipoli and Salonica, such as malaria, both the forms of trench fever, and sandfly fever. The value of anti-choleraic inoculation and of the efforts of the Health Department at the Dardanelles, was shown by the freedom of the Royal Naval Division from cholera and plague, which were prevalent among the Turks in the immediate neighbourhood. War nephritis and trench or Gallipoli sore, apparently analogous to veldt sore, and due to a Gram-positive diplococcus, were also reported.

Diseases of Airmen.

From leakage of petrol spray the pilot might become dizzy, and the exhaust gases from the engine—CO and CO_2—might cause headache, drowsiness, and malaise. The rarefied atmosphere at great elevations might induce the symptoms known to balloonists. Psychasthenic symptoms—loss of self-confidence and resulting mental worry—were not uncommon, and proved that the victim had mistaken his sphere of activity. Flying was the job of a young man under 30, temperamentally and physically suitable. Perfect eyesight was necessary to effect a safe landing, perfect hearing to detect the first indications of engine defect, and free movement of the joints of the lower limbs to control the steering gear.

DISCUSSION.

Sir ARTHUR MAY, K.C.B., Medical Director-General R.N., spoke of the high standard of health in the navy, and paid a glowing tribute to the civilian medical men of all grades who had joined the Royal Naval Medical Service during the war. He especially emphasized the self-denial of the surgeon-probationers and the excellence of their services.

Dr. F. W. MOTT said that he had found that usually there had been some antecedent condition of nervous instability in cases of mental trouble among soldiers. Shell shock also occurred in those of a temperamentally nervous disposition. He was interested in what had been said about nitrous oxide fumes, and had recently received a brain, preparations of which showed that there had been a profound effect upon the blood, the haemoglobin being probably converted into methaemoglobin.

Dr. THOMAS BEATON (temporary Surgeon, R.N.) said that the number of cases of the neuroses and psychoses admitted to the Royal Naval Hospital, Chatham, had steadily increased until, in the last quarter of 1916, the admissions were six times the average quarterly admissions in peace. The relative incidence to the total number of medical cases admitted, however, had only increased by 2 per cent. each year of the war. Of the cases of mental disturbance 60 per cent. showed conduct which could be termed insane, the remaining 40 per cent. consisting of pure neuroses and the psycho-neuroses. General paralysis, which formed 5 per cent., almost invariably showed marked dementia rather than any definite delusional state. Cases of non-systematized delusional insanity, which were the most common, showed a tendency towards rapid recovery under the influence of hospital life and the removal of stress. There was generally a condition of congenital defect underlying the delusional content. True neurasthenia was very rare, whilst hysterical states, mutism, functional paralysis, etc., were extremely infrequent, and only seen in cases previously of hysterical nature. The majority of the cases were of a type bordering on the neurasthenic on the one hand and on the obsessional on the other, showing distinct mental aberration but little derangement of the general bodily condition. This condition of psychasthenia occurred in association with congenital mental deficiency in the youth and the young adult, with senile and atheromatous change in the middle aged and old adult, and between these ages almost invariably followed on a period of especially arduous stress. The state of adaptation which was the barrier by which perceptions liable to arouse the primary instincts were prevented from arising in consciousness to their true significance was the main factor involved. If it failed or a vivid perception pierced through and succeeded in arousing the primary instincts, the individual had to maintain his normal level against an ever-increasing load of mental stress. The development of the various conditions demanded time, and this was afforded by the special conditions of modern naval warfare—the long periods of purely routine work with a constant anticipation of real action. The remarkable feature was that the average man should be capable of adaptation to such a degree as to enable him to withstand such conditions over so long a period as he did. In a ship the close relation between individuals tended to produce a specialized herd instinct, usually termed the *moral*. Where the *moral* was strong the individual was saved from a great deal of the mental stress to which he might be subject, and cheerfulness and confidence, with mental stability, resulted. It could safely be stated that the *moral* of our ships had lost nothing of its high degree since the war began. The very small relative increase in the numbers of the cases was due to the decided difference between the conditions of peace and of war, and to the unpreventable inclusion of a few less constitutionally sound individuals in the greatly enlarged personnel of the service.

Dr. A. F. HURST cited the work of Crile and of Cannon, who had shown that the states of fear, anger, and pain produced an increased activity of the adrenals. This was in the nature of preparation for action, and, if too prolonged, exhaustion of the suprarenal glands (and possibly of the thyroid) occurred. This explained the low blood pressure met with after serious illnesses in soldiers—a pressure which gradually improved as the cases got better. There was an overaction of the thyroid and suprarenal together in cases of apparent hyperthyroidism, and the blood pressure was higher than one would expect with simple overactivity of the thyroid. With rest, bromide, etc., the pressure fell. The cases of tabes and general paralysis brought on by shock and strain improved so much by treatment that he had been almost tempted to send them back to service. This he ascribed to the fact that they came under treatment in a very early stage. For war dreams he had found hypnotism very successful, even one treatment sometimes causing their cessation. It was important that it should be employed at night, so that the patient could afterwards be left to sleep until morning. He regarded

the doubtful intestinal cases met with in the Mediterranean as examples of true dysentery, for in his experience in all cases in which mucus and blood were present in the stools the amoebae were found. Large injections intravenously of serum had proved remarkably successful.

Of the beri beri cases seen, the majority had had jaundice, and the remainder some gastro-intestinal symptoms. He favoured the view of Hamilton White that the jaundice was due to duodenal infection, which was followed by a toxic neuritis as in the case of diphtheria.

Reviews.

EDUCATING THE PUBLIC ON VENEREAL DISEASE.

RECOMMENDATIONS 29 to 33 of the Final Report of the Royal Commission on Venereal Diseases laid strong emphasis on the necessity for the better education of the public on the dangers of venereal diseases and in regard to moral conduct as bearing upon sexual relations. Of the necessity for the recommendations there could be no doubt, but, with the exception of the medical profession, there were no competent teachers, and no books to which persons of reasonable intelligence could refer for instruction. The latter deficiency is rapidly being met by the publication of books appealing to different sections of the community. In *The Nation's Health*,[1] written by Sir MALCOLM MORRIS, we have an excellent work. It is "intended especially for members of county borough, county, and borough councils, of boards of guardians and sanitary authorities, for the lay members of the boards of management of hospitals, and for head masters and head mistresses." Sir Malcolm Morris did valuable service in the national interest on the Royal Commission; he has done, and is doing, even more through the National Council for Combating Venereal Diseases; but we venture to think that in the writing of this book he will have done most "in pursuance of the policy of candid but not unrestrained discussion recommended by the Royal Commission." The book is divided into ten chapters; each deals with some aspect of the question. The first chapter, on the Public Health Service, shows how excellent and far reaching in its effects for the health of the community has been the work of the public health service of the country. In no other land have there been greater success and perfection in sanitation, both as applied to housing, town organization, and personal affairs, save only in the one matter of venereal disease. In this one regard there has been a conspiracy of silence. It was a habit, not of hypocrisy nor of prudery, but a habit of reticence, a survival of the Puritan protest against the old licence of speech which treated all sexual subjects as themes for ribald mirth. But as the author claimed in his appeal for the establishment of the Royal Commission, it was "a disastrously mistaken counsel, the effect of which is to allow a free course in the body politic to gross evils which might be substantially checked were they but frankly recognized and boldly grappled with." In later chapters there follow accounts of the clinical conditions, the mode of spread and effects of syphilis and gonorrhoea, on the prevalence, distribution, and economic effects of the diseases, and the facilities for the diagnosis and treatment. All are written with a delicacy and simplicity of statement and phrasing that will be void of offence even for the most fastidious, and yet the warning is sufficiently distinct to carry conviction to every one of the necessity for action both personal and social. There is a chapter discussing the notification of venereal disease, reprinted from the *Nineteenth Century;* it is a convincing argument for the wisdom of the present attitude of the authorities and their advisers. We can commend this book to the study of all responsible persons of the community, and particularly to those who have the rule over others, for upon them rests the weight of an influence which, if it be not instructed, may be thrown into the wrong pan of the scales.

[1] *The Nation's Health: The Stamping Out of Venereal Diseases.* By Sir Malcolm Morris, K.C.V.O. London, New York, Toronto, and Melbourne: Cassell and Company, Ltd. 1917. (Demy 8vo, pp. 160. 3s. 6d. net.)

Another book is published for a different section of the community. The Catholic Social Guild has issued a small book, entitled *Prostitution: the Moral Bearing of the Problem.*[2] It is addressed to the Roman Catholic communion, and bears the imprimatur of the authorities of that Church, and a preface written by the Archbishop of Liverpool. The authors are "M. F." and "J. F."; the latter is described as "formerly Resident Medical Officer London Lock Hospital." The book is divided into two parts; the latter part, dealing with venereal diseases, is that written by "J. F.," and we may say without hesitation that in the brief space of sixty pages he has given as satisfactory and illuminating an account of the diseases as could well be written. The rest of the book is taken up with what may be assumed to be an exposition of the attitude of the Roman Catholic communion to prostitution and fornication. It covers the history of prostitution "viewed as a moral problem" amongst the Jews and in the early Christian Church, in mediaeval times, and from the sixteenth to the nineteenth centuries, and finally contains reflections on the "present day and after." The opinion expressed by the writer—and we may take it that it is authoritative, for the same expression is found in the foreword written by the Archbishop—is that the Roman ideal and practice are superior to any other, and in particular to the Protestant. The Archbishop in his preface writes: "Catholics may help to give the death blow to an opinion which from the time of Luther until the present day has been held by many of our Protestant fellow countrymen—that is, the supposed impossibility for the generality of men to control the sex appetite." We make little doubt that Protestant readers will take vigorous exception to such a statement. There can, at any rate, be no question that the iteration and reiteration of the words of the Litany of the Anglican Church, "From fornication and all other deadly sin . . . Good Lord, deliver us," can have left no doubt in the minds of the worshippers that the illicit indulgence of sex appetite was no excusable or venial sin. The stringency of the practice of the Free Churches of English-speaking countries is well known. It is not only the adhesion to a confession of faith that gains admission to these communions but an evident practice of life, and a breach of this rule is followed by the expulsion of the member. There is a possible, and perhaps harmless, reason for the attitude of the writers of this book and preface. The claim of a high standard leads to an attempt to maintain that standard from a spirit of emulation. If this be the truth of the matter no one will quarrel with the writers.

GUNSHOT WOUNDS OF THE ABDOMEN.

FOR the last two decades it has been the practice of surgeons in time of peace to operate without delay in penetrating wounds of the abdomen. But until the year 1915 it was the general rule that gunshot wounds of the abdomen sustained on the field of battle should receive only expectant treatment. Dr. J. ABADIE of Oran, who has written a book[3] on the subject, asserts that this difference between treatment in peace and treatment in war is due solely to differences in the facilities for surgical operations. His book is based on the experience of other surgeons in previous wars, when abstention from operation was the rule, and on the general experience of French surgeons (including himself) in the present war, when immediate laparotomy is being widely advocated. In any circumstances, the mortality from penetrating wounds of the abdomen received on the field of battle is high. The question is hardly one that can be settled by the comparison of statistics, as Dr. Abadie himself points out; but he has collected from the French literature 713 cases treated by the expectant method, with a mortality of 77 per cent., and 688 cases treated by laparotomy, with a mortality of 64 per cent. In 251 instances with wounds of the small intestine the mortality after operation was 70 per cent. Dr. Abadie lays stress on the importance of early laparotomy, and agrees with other surgeons in the

[2] *Prostitution: the Moral Bearings of the Problem.* By M. F.; with a chapter on Venereal Diseases by J. F.; and a Foreword by the Archbishop of Liverpool. London: Published for the Catholic Social Guild by P. S. King and Son, Ltd. 1917. (Fcap. 8vo, pp. 252. 2s net.)

[3] *Les Blessures de l'Abdomen.* Par J. Abadie (d'Oran) Préface de J.-L. Faure. Collection Horizon: Précis de Médecine et de Chirurgie de Guerre. Paris: Masson et Cie. 1916. (Cr. 8vo, pp. 241; 69 figures, 4 plates. Fr. 4.)

opinion that long journeys to hospital on stretchers or in ambulances are disastrous, and argues that though it is essential that both patient and surgeon should be beyond the zone of shellfire, the surgeon should come up and be ready to operate as close to the trenches as is practicable. He speaks highly of the virtues of small operating theatres on wheels, or "autochirs," that can be moved about behind the lines as required by the exigencies of the moment.

His book is well planned, and gives a full discussion of the principles and methods of surgical treatment indicated in these cases. He prefers chloroform as a general anaesthetic; after operation the patient is put back to bed in Fowler's position, half sitting up with the knees bent. For four or five days after the operation nothing should be given by the mouth, but 4 or 5 litres of fluid should be passed daily into the rectum drop by drop. The lower part of the trunk should be surrounded by a damp compress renewed every twelve hours. The patient should be kept continuously under the influence of morphine exhibited by hypodermic injection, and should not be evacuated from hospital for at least a fortnight after operation. Dr. Abadie writes in a clear and attractive style, and his book is well illustrated.

SURGICAL NURSING.

MR. CHARLES CHILDE is to be congratulated on the second edition of *Surgical Nursing and Technique*,[4] the first edition of which appeared in 1909 under the title *Operative Nursing and Technique*. In the review of the first edition that appeared in our columns it received high commendation, and it was urged that it "should be read by every theatre sister and all surgical nurses who aspire to a full appreciation of what is meant by aseptic surgery," and it was equally commended to the attention of budding house-surgeons. That recommendation holds good to-day.

The new edition has appeared at a most opportune time, for there were never so many nurses, both trained and untrained, at work than there are to day, and the study of such a book as this will be of great value to them. Particularly do we recommend it to those whose "training" has been no more than a brief course of "lessons in first aid," just sufficient to enable them to take a share in the minor nursing of the more or less convalescent cases of the numerous volunteer and auxiliary military hospitals. The study of such a work as this will give them a better insight into the mysteries of the craft with which they are temporarily associated than half a dozen of the lesser manuals with which they are usually equipped, and the knowledge they will gain will enhance their appreciation of the seriousness of their work.

In the second edition the author has drawn attention to what has long been a crying injustice to the nursing profession—the long hours and inadequate remuneration of the nursing staff in hospitals For too long the charitable public have been content to consider that all professional services to hospitals should be put on a "charitable" basis, which means poor pay, ill conditions, and worse prospects. The public appear to be entirely oblivious of the difference between the service rendered by their charitable donations and that rendered by those who work in the hospitals. Their charity is the giving of their superfluity—the money they can well spare after their necessities and comforts have been fully provided for. The charity of the workers in these same hospitals is the work of their lives and not of their spare moments, and it should be remunerated both in proportion to the value of the work and the responsibility attaching thereto. We hope that governors of hospitals and members of hospital boards will read this first chapter of Mr. Childe's book, and take to heart the justice of its appeal.

PREHISTORIC MAN.

THE first part of the second volume of the *Proceedings of the Prehistoric Society of East Anglia*[5] is equal in interest to any of its predecessors. This publication appears to have already become the recognized medium for the printing of observations and the recording of discoveries in connexion with the Stone Age throughout our country, and in the present number are articles dealing with Kent and Cornwall, Surrey and Lancashire.

The President of the Society, Mr. Reid Moir, has an important paper on the subcrag implements of Suffolk. He makes an extremely strong case for the acceptance of the flints as implements. Except that there is only a solitary example, there seems to be no valid reason for doubting that flint implements are to be found under the coralline crag as well as under the red crag.

Mr. Reginald Smith describes a few specimens of a large collection of ovate palaeoliths of St. Acheul pattern, found in plateau gravel near Reading, and in particular a beautiful specimen of a late palaeolith found in gravel on Goring Heath at a level of about 450 ft. O.D.—a really notable discovery.

A very interesting article is contributed by Mr. H. Dewey on surface changes since the palaeolithic period in Kent and Surrey, in which he arrives at the conclusions that the cultural stages from the earliest chalks to the latest St. Acheul types do not represent a long period, that there is no evidence of a prolonged period since the beginning of neolithic times, but that, on the other hand, since the Mousterian period, the Thames has deepened its channel to an extent of perhaps 100 feet.

Mr. Dixon Hewitt gives an account of certain experiments which he has made with a view to throwing light on the agencies concerned in the patination of flint. He concludes that the chief agents are alkaline salts, and that scratching of flints or surface abrasions are conducive to early and thorough patination. He believes that the staining of flints is due to the action of iron and manganese salts on a previously patinated surface.

Several other articles of possibly equal interest make up a volume which is capable, we would think, of satisfying archaeologists with the most varied taste in things prehistoric.

NOTES ON BOOKS.

THE second edition of Dr. BROCKBANK'S excellent little book on *Heart Disease*[6] contains almost all the medical practitioner and student wants to know about the clinical aspects of the subject. The book is chiefly occupied with the auscultatory signs of cardiac disease, how they arise and how they are to be interpreted in both health and sickness. Discussing the still vexed question of the genesis of a presystolic crescendo murmur in cases of mitral stenosis, Dr. Brockbank brings forward his reasons for believing that it is not an auriculo-systolic murmur, as so many hold, but an early ventriculo-systolic murmur of presphygmic rhythm. The book is clearly written, and full of useful clinical information. It should be in the hands of medical students in the medical wards and out-patient departments.

But for a few additions and corrections, the fourth edition of Professor G. G. DAVIS'S large textbook of *Applied Anatomy*,[7] containing an account of the construction of the human body considered in relation to its functions, diseases, and injuries, closely resembles the third edition, which was reviewed in the BRITISH MEDICAL JOURNAL of February 5th, 1916, p. 203. There is a great deal of useful information in the book, which should find a place in all medical libraries, and may be recommended to the attention of the discriminating medical student. Its many illustrations, drawn by Mr. E. F. Faber, are excellent.

Readers who wish for a statement of the case against corporal punishment in any form should read *The Flogging Craze*,[8] by Mr. H. S. SALT. This distinguished and industrious humanitarian has been at pains to collect the opinions expressed at various times by many writers adverse to the practice, from Plutarch downwards. There

[4] *Surgical Nursing and Technique: A Book for Nurses, Dressers, House-surgeons etc.* By C. P. Childe, B.A., M.R.C.S.Eng., Lieutenant-Colonel R.A.M.C.(T.). Second edition. London: Baillière, Tindall, and Cox. 1916. (Cr. 8vo. pp. 240; 91 figures. 3s. 6d. net.)

[5] *Proceedings of the Prehistoric Society of East Anglia for 1914-15.* Vol. ii. Part I. London: H. K. Lewis and Co., Ltd. 1915. (Demy 8vo, pp. 157; 35 plates. 3s. 6d. net.)

[6] *The Diagnosis and Treatment of Heart Disease.* By E. M. Brockbank, M.D.Vict., F.R.C.P. Second edition. London: H. K. Lewis and Co., Ltd. 1916. (Cr. 8vo. pp. 128; 22 figures. 3s. 6d. net.)

[7] *Applied Anatomy: The Construction of the Human Body Considered in Relation to its Functions, Diseases and Injuries.* By G. G. Davis, M.D., University of Pennsylvania and Goettingen, M.R.C.S. Eng., LL.D.Lafayette. Fourth edition. Illustrated by E. F. Faber. Philadelphia and London: J. B. Lippincott Co. 1916. (Sup. roy. 8vo, pp. 640; 631 figures. 24s. net.)

[8] *The Flogging Craze: A Statement of the Case Against Corporal Punishment.* By H. S. Salt. With a Foreword by Sir George Greenwood, M.P. Published for the Humanitarian League. London: G. Allen and Unwin, Ltd. 1916. (Cr. 8vo, pp. 159; 1 illustration. 2s. 6d. net.)

can be no doubt that in a more perfect world than ours corporal punishment, whether for man or beast, might be uncalled for. And there is no doubt that as civilization progresses the occasions on which corporal punishment is an effective punishment diminish in number. But it is unlikely that all his readers will agree with Mr. Salt that now is the time to abolish it.

Personal Health; a Doctor Book for Discriminating People,[9] gives an up-to-date account of domestic medical treatment written by an author who has conducted a daily "Health Talk" department in the American press, and holds that personal health is a subject that is sadly neglected in the popular literature of the day. The book is written in chatty style, and appears to cover the ground adequately.

Whitaker's Almanack[10] for 1917 contains the usual mass of information we are accustomed to find in it, but it reflects the preoccupation of the country in several special articles. There is one on the Ministry of Munitions, and the history of the war—both naval and military—is continued. There are also articles on the financial side of the war, on British imports and enemy trade, on labour and the war, on aeronautics, and a series of signed articles on British industries, beginning with applied photography and ending with wool. The influence of the war is reflected also in the increased space given to lists of honours and distinctions. Here we suggest that the colours of ribbons should in every case be given. Owing to the rise in the cost of production, it has been found necessary to raise the price of the volume.

[9] *Personal Health; a Doctor Book for Discriminating People.* By W. Brady, M.D., Elmira, New York. Philadelphia and London: W. B. Saunders Co. 1916. (Post 8vo, pp. 407. 6s. 6d. net.)
[10] *Whitaker's Almanack for 1917.* By J. Whitaker, F.S.A. London. 1917. (3s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

Steam Disinfection.

THE Grampian Engineering Company, Limited, of Stirling, have issued a pamphlet on steam disinfection, in which they describe their "Velox" high-pressure steam system for treating such articles as bedding, mattresses, curtains, carpets, clothing, and textiles generally. The articles to be disinfected are placed in a wire cage, which is run upon rails into a galvanized chamber. Steam is then admitted to this chamber from the generator, first passing through a saturating drum, and at a pressure of about 15 lb. to the square inch twenty minutes' treatment is said to be sufficient for the effective penetration even of bulky and voluminous goods. For finer fabrics and for leather and rubber goods which would be injured by the high temperatures necessary, a combined high pressure steam and vacuum-formalin system is provided, and by drawing in formalin solution, the penetration is said to be effective at a temperature of about 170° F., some 80° below the range of temperatures in the purely high-pressure system. The pamphlet includes particulars of some tests carried out by Dr. J. Howard-Jones, M.O.H. Newport, which were undertaken with a view to ascertaining the effects of high-pressure steam disinfection on the materials themselves and its efficiency as a means of preventing the growth of micro-organisms. In both respects the results of the tests were satisfactory.

MOTOR NOTES FOR MEDICAL MEN.

BY H. MASSAC BUIST.

THE FUEL SITUATION: TO-DAY AND TO-MORROW.

THE action of the Petrol Control Committee in intimating that fresh licences will not be issued to private car owners on the expiry of the current series at the end of April is one of direct, though not gloomy, interest to the medical profession. The situation that occasions the decision consists of the abnormal increase in the demand for petrol not merely for waging the war, but also for industrial and, now, for agricultural service being offset by the new style of submarine warfare, which, whether it proves easy and quick or difficult and long to suppress, is, in any case, quite a different form of enterprise from the submarining which the enemy had in mind when making somewhat similar threats in 1916 and on the threshold of 1915. The 1917 variety is submarining not merely in the areas patrolled by the British fleet in force, and particularly in the North Sea and the Mediterranean, but practically in the seven seas outside them, and especially all over the North and South Atlantic. Fortunately this new phase of the campaign, embracing war on neutrality, finds us with an absolutely unprecedented quantity of petrol in these islands, despite the fact that there has never been a moment's relief in the rate of expending it on war and industrial purposes. Nevertheless it would be suicidal for the Government to reckon on our sustaining no losses of tank vessels as a result of the new submarine campaign. Doubtless the enemy will destroy a portion of these. The extra shipbuilding during the last twelve months has been admirable; but, in any case, it is sufficient only to keep up with our increasing demand for motor fuel. Further, fresh building from now onwards cannot be expected to overtake the increasing demand, for it is impossible to foresee the limits of that demand. The only certain fact in connexion with it is that, under every head, from ordinary transport to the marine and aërial war services, as well as for industrial and agricultural uses, this nation's demands for motor fuel are sure to be increasing as long as the campaign lasts.

NO CAUSE FOR ALARM.

Inasmuch as the agricultural demand practically constitutes a new factor in 1917, and one of the most vital importance, obviously the Petrol Control Committee—which put the general public on almost impracticably short rations during the first licensing term for a period of three months last summer and autumn, and which revealed its goodwill in doubling the amount of rations for the second licensing period, that now current, for a term of six months—would not be justified in allowing that increased rate of motor fuel to any and all applicants from the end of April onwards. On the contrary, it has no option but to see to it that the use of motor fuel is confined wholly to work of national importance. It will be observed that, while it is plain that no more petrol is to be granted to private users, nevertheless it is made abundantly clear that if petrol is needed in connexion with work of national importance licences will be issued. We know the Government has always recognized the work of the medical profession as being of national importance. That recognition is being more fully accorded as time passes and doctors become more and more scarce. Hence there is no cause for alarm among the ranks of the medical profession.

GOVERNING FACTORS.

It may be taken for granted that between now and the expiry of the current petrol licences the Petrol Control Committee, which is to review the whole scheme of allowances, will be able to arrange for medical men to have supplies, possibly somewhat restricted, but still sufficient for the work of the average practitioner. Commercial vehicle users will certainly be allowed less.

By the time the fresh series of licences is due to be issued we shall have had eleven weeks' experience of the new style German submarining campaign. That will be amply sufficient to enable us to form an accurate estimate of the effect it will exercise on our conduct of the war. Of course the talk in the German press that the Teutonic public must not expect immediate results is all nonsense, since the worst damage in connexion with enterprises of this sort is, naturally, done in their earliest stages, because it is impossible to foresee every detail of the enemy's schemes and to make adequate provision against it.

Apart from this, the additional steps the British authorities are taking to deal with the menace must of course bear more and more fruit with the lapse of every week. Hence, to an extent, to-day we are in doubt as to what the new style submarining menace will mean in practice, whereas we shall have no doubt on the subject at the end of April. Most likely by then we shall have realized that the situation will neither be hopeless nor negligible, but that a certain average of loss will have to be reckoned on for a more or less indefinite period, an average which will influence private car owners whose work is of national importance, done with the aid of their cars, as notably medical men, who will therefore continue to receive petrol rations modified, if at all, to a slight degree.

In the meantime nobody can foretell in terms of gallons what will be the allowance to the individual medical man. Even if the Petrol Control Committee were to arrive at a decision to-day it would be of no value, because ten weeks hence, when the time came to put the matter in practice, the licensing situation, whether more or less favourable, would certainly be different.

This, too, must be had in mind in connexion with the Petrol Committee's work: that it has not made the mistake made by many other supplies controlling committees, here or in enemy country, of issuing licences for what is not obtainable. To date, motorists have always been able to purchase the petrol which their licences entitle them to buy, though a retailer here or there may be temporarily out of stock. There is reason to believe, moreover, that that policy will be pursued by the Committee as long as it is necessary for it to continue its work.

THE SPARE PARTS PROBLEM.

A correspondent who has been reading about the spare parts difficulty mentions that he intimated to the manufacturers of his car that he was sending his motorman to inquire about getting spare parts; they replied that they would not be able to supply him with any spare parts unless he specified exactly what would be required, as they could not say what parts would be wanted, were only working from hand to mouth, and had no bulk of goods to send out. This firm, therefore, will not deplete its stock of spare parts, a policy it is entitled to adopt if it pleases, and apparently it is not able to supply spare parts from stock, but is steadily driven to making them from hand to mouth. Therefore it does not come strictly under the category of those concerned with stocks of spare parts. Obviously, it is quite impossible to deal with the position of individual firms throughout the country. What one can do only is to deal with the situation generally. That has been done in these notes for months past. Furthermore, in the interval since the matter was first mentioned in these columns spare parts supplies have, of course, been drawn on almost continuously by all classes of users. Hence the present situation is that, certainly in the majority of cases, stocks are not available for drawing on, particularly at random. Whether a given manufacturer knows, or does not know, what parts are likely to be needed for spares, of course, depends entirely on the length of time the given model has been in use and the quantities in which it has been produced since. It is from such experiences only that the average can be ascertained. Moreover, inasmuch as the stripping of cars for examination is in some cases quite a profitable enterprise, certain firms are not willing to give advice as to what spare parts are needed without themselves examining the car and charging the usual fee for the stripping and reassembling operations. For the rest, the only advice that can be given is that which was printed in these columns quite recently—namely, that such parts as the bevel or worm of the back axle; possibly the second or third speed of the gearbox; perhaps the steering segment, or piston rings, are the sorts of parts that are most likely to wear out first in an ordinary car properly treated. Wear is usually gradual, hence often the given part gives notice of the fact, as by slackness or noise. Then it is as well to replace it for fear of a breakage. These are the only hints which are at all applicable in a general way. For the rest, I gravely doubt if at this time any maker has a stock of spare parts for supply offhand.

VOLUNTARY RESTRICTION OF DIET.

IT is reported unofficially that the information reaching the Food Controller's department justifies the belief that housekeepers are making an effort to restrict domestic consumption of bread, meat, and sugar to the amounts recommended, that is to say, 4 lb. bread, 2½ lb. meat, and ¾ lb. sugar, weekly per head. It is said also that the reports as to panic buying by housekeepers to form hoards of non-perishable provisions have been exaggerated, and certainly there does not seem to be in present circumstances any need for panic.

We have been at the pains to estimate the value of the food supplied to three middle-class families during the present winter, and before Lord Devonport's appeal for restriction was made. The families consisted of 16 persons—3 men (sedentary), 9 women, and 4 children—and save for a certain amount of economy in buying, due to the increase in prices, and to a considerable diminution in the amount of sugar owing to the difficulty in obtaining it, there was no very noticeable alteration in the standard of living. The Committee of the Royal Society came to the conclusion, after a full consideration of the dietary requirements of a nation for the most part engaged in active work, that they could not be met satisfactorily on a less supply in the food, as purchased, than 100 grams protein, 100 grams fat, and 500 grams carbohydrate, equal approximately to 3,400 calories per "man" per day, a "man" being an average workman doing an average day's work. Generally speaking, however, a woman or child requires less food than a man—that is, has a man-value less than unity. To convert the population of men, women, and children into units, or "men" as defined above, the total number must be reduced by 23 per cent. In reckoning diet, 100 men, women, and children equal 77 units or "men." The quantity of foodstuffs avaliable during the period 1909–13 yielded:

	Protein.	Fat.	Carbohydrates.	Calories.
	Grams.	Grams.	Grams.	
Per head ...	87	100	440	3,091
Per man	113	130	571	4,009

According to the analysis made of the diet of the three families mentioned, the amount of protein and fat consumed was in excess of requirements, the amount of carbohydrate rather lower than the standard taken by the Committee, and the yield in calories considerably lower per head. The nutritive value of the fresh vegetables and the very small quantity of fish used were so small that they have not been taken into account.

Diet before Voluntary Restriction of Three Middle-class Families (16 Persons).

	Weekly Weight in Ounces.	Daily Yield in Grams.			Energy Value in Calories.
		Protein.	Fat.	Carbohydrate.	
Meat, sausages, bacon	50.5	23.8	52.4	1.1	663
Bread	58.0	18.7	2.8	123.1	580
Sugar	8.9	—	—	35.3	145
Totals	117.4	47.5	55.2	159.5	1388
Cheese	4 0	4.5	4.9	0.4	63.4
Butter, etc.	13.2	0.5	45.3	—	424.0
Potatoes...	32.0	2.27	0.13	27.2	122.0
Flour and oatmeal ...	7.0	16.2	2.3	21.3	103.0
Rice, lentils, etc. ...	11.6	1.6	0.7	24.3	270.0
Jam and dried fruits	3.8	3.7	0.2	8.7	37.8
Totals	71.6	28.77	53.53	81.9	1020.2
Total ration of restricted articles	—	47.5	55.2	159.5	1388
Total of extras ...	—	28.77	53 53	81.9	1020.2
		76.27	108.73	241.4	2408 2

The fallacy in this analysis is that it leaves out of account midday restaurant meals taken by three adult males. In Dr. Leonard Hill's report to the Health of Munition Workers Committee on an investigation of workers' food he gives an analysis of twelve canteen meals, from which it appears that they afforded on an average protein 42.43, fat 36.7, carbohydrate 146.9 grams, yielding 1,114 calories. To get the average effect of this addition it would appear that we may add to the totals in the table protein 8, fat 7, carbohydrate 27.5 grams, and calories 209, giving total values for the three households per head of protein 84.27, fat 115.73, carbohydrate 268.9 grams, yielding energy value in calories per head of 2617.2. As a set off a certain allowance ought to be made for meals given in the homes to occasional workers, but probably the effect of any such deduction on the figures here given would be very small. So far as our examination goes, therefore, it appears that the members of the middle-class families as to whom the inquiry was made received rather less protein, rather more fat, and considerably less carbohydrates than the standard per head of the whole population, and that the yield in calories was about 15 per cent. less (waste being neglected).

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SATURDAY, FEBRUARY 17TH, 1917.

MORE INIQUITIES OF THE RAT.

EVERY man's hand is against the rat. In political circles the rat's character is held to explain the moral turpitude that leads from time to time to defections from the Party. Women, it is credibly reported, will fly from the rat with all the alacrity they display in escaping from the dangerous proximity of the domestic mouse. Indeed, one would probably be well within the truth in stating that the rat's only real friend among human beings is the schoolboy, who is apt to cherish white specimens of the race as pets. From the epidemiological point of view rats have had a thoroughly bad name of late years, if only as the presumedly involuntary carriers of fleas infected with the bacillus of bubonic plague, a disease that kills its tens of thousands every year. Rats, too, are the carriers of infection in the rare disease known by the name of "rat-bite fever," of which over eighty cases have been described in Europe, Asia, and America during the last twenty years. It is of interest to note, while this fever is under discussion, that certain Japanese investigators have quite recently reported[1] that, after investigating two cases of the disease, they have identified a new spirochaete, which they name the *S. morsus muris*, as the cause of rat-bite fever in Japan. This organism is found in about 3 per cent. of Japanese house rats, and, a matter of importance from the point of view of treatment, it is most markedly affected by salvarsan. It is true that other scientists have found quite other organisms (aspergilli, telosporidia, diplococci, bacilli) to be the cause of rat-bite fever, and in the BRITISH MEDICAL JOURNAL of February 19th, 1916 (p. 285), will be found an account of Dr. F. G. Blake's confirmation of Schottmüller's discovery that the causal organism of the fever is a streptothrix. But it is pointed out that rat bites may be quite capable of infecting human beings with other diseases as well as with true "rat-bite fever," and that the cases recorded by Schottmüller and Blake differed in several important particulars from rat-bite fever as it occurs in Japan. From the experimental point of view, rat-bite fever may be transmitted from rats to guinea-pigs, as was proved by Ogata in 1911. This experimental rat-bite fever has been investigated by three bacteriologists[2] at Tokyo, and they claim to have proved that the disease is due to a spirochaete that under the microscope differs in form from that described by the four Japanese investigators mentioned above, but resembles it in being sensitive to the action of arsenical compounds. About ten rats out of some forty employed with success in these experiments were found to be carriers of the spirochaete of rat-bite fever.

But this does not complete the tale of the rat's nosological infamy. There is now good reason for believing that rats may also be the carriers of the infecting agent in Weil's disease. As may be seen by reference to any medical textbook, some thirty years ago Weil described an epidemic form of infectious jaundice that has since been known by his name, and is now also known as spirochaetosis icterohaemorrhagica. A variety of jaundice that is similar, if not identical, occurs in Japan; and, as was related in the BRITISH MEDICAL JOURNAL of April 1st, 1916 (p. 491) certain Japanese medical men identified in 1915 a new spirochaete, the *S. icterohaemorrhagiae*, as the organism giving rise to this variety of epidemic jaundice. The identical organism has been isolated from cases of infectious jaundice in France, in Italy, and in the lands of the Central Powers. An account of the occurrence of the same disease in the army in Flanders, written by Captain Adrian Stokes, R.A.M.C.(T.), and Captain J. A. Ryle, R.A.M.C.(S.R.), will be found in the BRITISH MEDICAL JOURNAL of September 23rd, 1916 (p. 413). The disease is clearly widespread at the present time, therefore. It is also highly infectious, and has even been caught in a bacteriological laboratory by a very careful worker engaged in transmitting the virus from one experimental animal—a guinea-pig—to another. The pathogenic spirochaetes are excreted in the urine and faeces of the patients, a fact which may indicate the common routes of infection in Weil's disease, and points out the paths along which general prophylaxis against its spread must be sought. But prophylaxis by both active and passive immunization is also possible. A recent paper[3] on the subject by the Japanese doctors Ido, Hoki, Ito, and Wani, establishes the fact that guinea-pigs can be protected against infection by the specific spirochaete in two ways—either by inoculation with cultures of the organism, or by the injection of immune serum from other animals already protected in this manner. In the case of man, only passive immunization has yet been attempted, by the use of serum derived from a horse protected against spirochaetosis icterohaemorrhagica through vaccination with preparations of the spirochaete. Although no case has occurred in which the efficacy of this immune serum could actually be put to the test, the authors are of opinion that it does confer on man a partial immunity to the disease; this is supposed to last for from six months to a year. They also give evidence to show that in Japan both the house rats and the brown ditch rats are often carriers of the spirochaete, which may be found in their kidneys, as was pointed out in 1916 by Miyajima. The importance of this observation is indicated by the fact that cooks and butchers seem particularly prone to this form of acute infectious jaundice; indeed, two of the fifty-five patients treated by the authors had been bitten by rats from seven to nine days before they developed the disease. Probably the infection is transmitted from rats to man by means of the rat's urine, directly or indirectly, in most cases. Nearly 40 per cent. of the rats in the city and coal mines of Kyushu were found to carry highly virulent pathogenic spirochaetes in their kidneys.

A full account of the serum treatment of Weil's disease, so far as it has been tried at present, has been published by Drs. Inada, Ido, Hoki, Ito, and Wani.[4] At first the serum was obtained from goats immunized by inoculation with the spirochaete. This was in August, 1915; later the serum obtained from patients convalescent from the disease was employed, and later still the serum from actively immunized horses. The serum acts mainly by destroying the spirochaetes; technically speaking, it is spirochaetolytic and spirochaetocidal, and that it

[1] K. Futaki, I. Takaki, T. Taniguchi, and S. Osumi. *Journ. Experim. Med.*, Baltimore, 1917, xxv. 33.
[2] K. Ishiwara, T. Ohtawara, and K. Tamura. Ibid., p. 45.
[3] *Journ. Experim. Med.*, Baltimore, 1916, xxiv, 471.
[4] Ibid., p. 485.

has any antitoxic effect has not yet been demonstrated. It should be given subcutaneously or intravenously in large doses (up to 60 c.cm.) as early as possible in the disease. In all, thirty-five patients were treated, of whom five died of the disease, though one was moribund on admission to hospital. These figures show a mortality of about 11 per cent. As a rule, the mortality from Weil's disease in Japan appears to be from 30 to 50 per cent. Such results as these show that the serum treatment is at any rate promising; but the authors do not claim more for it at present, considering that the number of cases treated is not large enough to justify the drawing of any more definite conclusions. They find that the serum destroys the spirochaetes contained in the circulating blood, promotes the development of antibodies, and lessens the number of the organisms in the patients' viscera, where they are already numerous by the fifth day of the disease.

DELINQUENT CHILDREN AND THE WAR.

STATISTICS issued by the Home Office show that during the war there has been a considerable increase in the numbers of juvenile offenders, and especially of juvenile thieves. Inquiries made of the police of seventeen of the largest towns showed that the total number of children and young persons charged with punishable offences between December, 1915, and February, 1916, was 34 per cent. larger than it was twelve months previously. A "child," it may be added, is technically a boy or girl under the age of 14; a "young person" is one aged 14, but under 16 years old. The increase in the number of thefts committed is nearly 50 per cent. The whole country is affected, with the result that at least 12,500 more children now come yearly before the magistrates than in the days of peace. Reformatories and industrial schools have, it is said, nearly all been filled up during the last two years, with the result that our pessimists are able to point out yet another way in which the country is going to the dogs, and our alarmists cry out to know what can be done to check this portentous outburst of juvenile depravity.

But is the outlook so gloomy after all? Is there any real cause for believing that our children and young persons are becoming vicious rather than out of hand, and are degenerating rather than kicking over the traces? Let us think for a moment how favourable the circumstances are nowadays for juvenile delinquencies of all sorts. The streets at night are abnormally dark, a fact favouring the escape of offenders of all sorts. The police are reduced in number, and their efficiency is still further lessened by the restricted lighting of the streets. Regular attendance at school is in many districts a thing of the past; some 1,200 school buildings have been taken as hospitals and their pupils distributed among neighbouring schools, with the result that school hours are curtailed; in many cases women teachers have taken the place of men in the boys' classes—a change often bad for discipline; perhaps 200,000 children between the ages of 11 and 13 have been released from school to satisfy the present abnormal demand for boy labour. According to Mr. Spurley Hey of Manchester, children exhibit the greatest tendency to commit offences when they are 12 or 13 years old. About five million men have been withdrawn from home life, with the result that parental discipline is now far more lax in the home than it was. And, finally, many a child and young person now earns ten or twenty shillings or more a week in wages; what is more natural than that such juvenile wage-earners should at times succumb to the temptation to paint the town red?

An interesting pamphlet[1] upon the subject has just been issued by the Howard Association, which has now achieved its fiftieth anniversary. This association was founded under the patronage of Lord Brougham in 1866. Its object is to promote efficient methods for the prevention and treatment of crime and juvenile delinquency. It is directly responsible for many of the changes tending towards the more humane and rational treatment of offenders made since it came into existence, and it has still much useful work it hopes presently to carry out, all duly scheduled by Mr. Leeson on an early page of his pamphlet. He writes with a thorough knowledge of the facts and a deep sympathy with the whole subject, and does not in any way minimize the seriousness of the recent increase in juvenile delinquencies. It is consoling to find that he takes a reasonably optimistic view of the position. He points out that the children of to-day find authority at a discount, control lessened, facilities for naughtiness of every kind increased. Even for adults the world is now a harder place to do well in than it was before the war; it is not likely to be less hard for inexperienced children from whom guidance is withheld. Better still, Mr Leeson has remedies for the present anomalous state of affairs. He would have magistrates apply the Probation of Offenders Act (1907) more thoroughly and fully than they do; for example, juvenile theft should be met by a period of probationary supervision, and in addition by the infliction of a fine that will bring home to the parents the fact that an offence has been committed. He would increase the number of the salaried and voluntary probation officers, both men and women, whose duty it is to keep the juvenile delinquents under supervision. He suggests that in each locality should be formed a council for the care of children during the war, and that it should attend to the needs of children who are "difficult" at home as well as to those of the delinquents. He holds that too many children have been sent of late to industrial or reformatory schools, which should be kept for the worst offenders only. He discusses the question how far cinema shows may properly be held to have injured the moral sense of children, and advises the adoption of the Russian method of giving school teachers authority to permit or forbid the attendance of their pupils at the cinema theatres. He argues that more should be done to occupy and amuse school children out of school hours, and concludes by a strong plea for the reintroduction of moral teaching into our schools. As he says, it is not enough that our educational methods should produce cleverness; they must produce also goodness.

OFFICERS' INCOME TAX.

THERE seems to be a feeling among practitioners who have relinquished their civil work and are serving in the R.A.M.C. that they are not receiving fair treatment in connexion with their liability to payment of income tax. That this feeling is to some extent based on misunderstanding may be true, and indeed, in view of the very great complication of the legal provisions as they now stand, it would be extraordinary if it

[1] *The Child and the War; being Notes on Juvenile Delinquency.* By C. Leeson. London: Published for the Howard Association by P. S. King and Son, Ltd. 1917. (Demy 8vo, pp. 69. 1s. net.)

were otherwise; but it is also true that it has some solid foundations, and we fear that, however well or ill grounded that feeling may be, its existence tends to discourage the renewal of contracts for military service, and so to accentuate an already grave problem.

If no special provisions had been inserted in the recent Finance Acts very serious hardship would have been inflicted on large numbers of taxpayers who accepted commissions in His Majesty's Forces to the detriment of their civil occupations, but there are two distinct modes of giving relief in such case, which if not sufficient, at least mitigate the unfairness with which they are designed to deal. Our object here is not so much to discuss their adequacy as to urge that their operation should be made more automatic and less dependent on the initiative of the officer those provisions are intended to relieve.

The enactments in question are, first, that which provided for the calculation of the officer's civil liability on the basis of the profits of the actual year of assessment instead of on those of the three previous years, and, secondly, in the provision of a specially-reduced scale of rates of tax for army and navy pay. Taking the latter form of relief first, it is to be noted that, although the reduced scale has a maximum of 3s. 6d. as compared with the normal maximum of 5s., the propriety of any particular rate within the scale depends on the total income of the individual officer. In ordinary circumstances a medical practitioner would find comparatively little difficulty in preparing a statement of total income which could be declared to be approximately correct, but it is very much otherwise in the case of a practitioner on active service, whose practice is in the hands of a locumtenent, or other substitute, and who may be in the Mediterranean or in the East, with but little reliable and recent information about his own affairs. Consequently, it would seem that in many cases the form of declaration of total income received from the army agents is not always dealt with, because its proper completion is regarded as practically impossible. In such cases one of two things probably happens—either the officer is taxed as if his army pay constituted his total income from all sources, and some time later a former declaration or civil assessment is identified and a further sum deducted to bring up the total deductions to the amount appropriate to the rate indicated by his total income, or else the rate of tax is based on the rate corresponding to that in force for the previous year. In either case the civil earnings of the officer are imported into the computation by the assessors of the War Office—or, in other words, the Income Tax authorities take effective cognizance of the fact that the officer is concerned in a civil practice; if necessary, they will do so on their own initiative.

Neither does the interest of the Income Tax authorities in the matter cease at this point. The Finance Acts of the past two years provide that "allowances"—such as the life assurance allowance for instance—must be deducted primarily from assessments on army or navy pay. On the equity of setting the allowance against that portion of the income which is taxed at the lowest rate, and thus depriving the officer of the advantage of the army rate to the extent to which he has been prudent enough to make life assurance provision for his dependants, a good deal might be said. Our immediate point is that it appears to be the practice of the civil Income Tax authorities to notify the army agents in cases in which allowances have been formerly made from assessments on civil earnings, and forthwith to omit such allowances in calculating the tax to be paid locally. In view of the explicit provisions of the Acts, such a procedure is not open to criticism, however desirable an amendment of the operative statutes may be, but it is mentioned here, partly because there is reason to suppose that this question is not always understood, but more particularly as showing clearly that when the civil assessments are made the authorities do act on their knowledge of the practitioner's military activities in a matter which gives the advantage to the revenue. The gist of complaints which have reached us may be summed up by saying that the authorities appear to act on their knowledge as to the military service when it is to their advantage and to ignore that fact when the converse is the case. Their attitude seems to be "Heads I win and tails we call it quits."

The relief which is thus sometimes lost is embodied in a very complicated example of legislation by reference, but leaving out the "juridical niceties" of the matter it may be stated for present purposes to consist in payment on the current year's profits instead of on average profits. For example, for the financial year ending April 5th, 1917, an officer is entitled to pay on the profits of the year 1916 instead of on the average of those of the years 1913, 1914, and 1915. It might be supposed that, in making an assessment on an absent practitioner whose practice is in the hands of a locumtenent, or is being worked by colleagues, the authorities would make some attempt to fix it at or near the probable amount of the profits in those conditions; but in fact the three years' average basis is adopted and the assessment made at a figure which must necessarily be far in excess of the amount on which the officer should ultimately pay tax. The curious thing is that the authorities are legally bound to do so. The reason appears to lie in the fact that the enactment on which the adjustment of the liability rests did not contemplate a foreknowledge of circumstances affecting the profits; it presumed that not until the end of the year would the person assessed be able to show that his earnings were falling or necessarily know that such was the case. Hence the section in question (see 133 of the Income Tax Act of 1842) did not invalidate the "average" basis of assessment, but left the initiative entirely with the person assessed, who was entitled to claim an adjustment of his liability by way of repayment or otherwise at the end of the year. There is one other difficulty, and that is that this claim is dependent on the circumstances and income of the individual, and it is said that in the case of a partner serving in the Forces, the statutory requirement that the assessment of the profits of the practice should be made on the firm as such, is incompatible with a discrimination between the partners as to the basis on which each individual's liability is to be determined.

We have endeavoured to put the matter in as reasonable a light as possible, but it must be admitted that some change of procedure is an immediate necessity if officers are in fact to have the relief which the Legislature intended to grant. Doubtless that change may require statutory sanction, but if so the Finance Bill for the present year will offer the opportunity for any necessary amendment of the law, and the following suggested alterations would assist practitioners to obtain what is due to them without involving the revenue authorities in the loss of any tax to which they are fairly entitled: (1) that, as before 1907, assessments be made on individual members of firms, and not (unless by request of the members) in the name of the firm as such; (2) that assessments on persons serving abroad be postponed for twelve months and made only after they have

had an opportunity of declaring their profits for the year; and (3) that any person serving abroad may lodge an appeal against the quantum of an assessment or for an adjustment of an assessment by reference to his profit for one year at any time within three years from the last day of that year.

It will be seen that the suggestions are framed simply and solely to facilitate the operation of existing forms of relief. In many quarters it is thought that the case of the army officer with a civil practice has not yet received adequate consideration. The matter will no doubt be raised again for discussion in the House of Commons when the next Budget is debated, and we hope then to revert to the matter.

NATIONAL SERVICE AND THE MOBILIZATION OF THE PROFESSION.

THE terms in which the Director of National Service referred to the medical profession in his speech of February 6th were reproduced in full in the JOURNAL of last week (p. 200). In the course of his remarks Mr. Chamberlain said that it would be necessary to arrange that doctors should be so mobilized and distributed that the needs both of the civil population and of the army could be met. At the meeting of the Central Medical War Committee on February 14th the chairman reported that an interview had taken place between certain members of the Committee and the Director of National Service on the subject of mobilization of the medical profession, as suggested by him in the general statement of his intentions to which we have referred. Mr. Chamberlain is now considering the terms of a communication laying the whole matter before members of the medical profession and appealing to them to volunteer their services. It was felt by the Central Medical War Committee that the work which would fall upon it, should it receive a mandate to add to its previous activities others connected with the proposed general mobilization of the profession, would necessitate additions to its central staff, and an interesting debate took place on the way in which the personnel of its central staff might best be increased. The great advantage which would result from strengthening the position of the local medical war committees was insisted upon. There was a general feeling in the Committee that these local committees were not always, or perhaps as a rule, used to the greatest advantage by the War Office, and that the War Office could very much assist in the work of fair and adequate recruiting to meet the military needs of the country by ensuring that the medical military authorities in the various commands at home should always be in close touch with the local medical war committees for the districts within the area of the command.

CIVIL MOBILIZATION IN FRANCE.

THE bill drafted by the French Government for general civil mobilization is comprehensive. It leaves room for the voluntary principle, but proposes to resort to compulsion if volunteers do not come forward quickly in sufficient numbers. The first article would extend the provisions of the law as to military mobilization to all establishments, enterprises, and works affecting national defence or the food of the people. It would apply, without prejudice to his military obligations, to every French male over 16 and under 60 years of age not already mobilized for the army or navy. Every such person must register at the Mairie, stating his name and occupation. The Minister of Labour would determine the number of persons required for various classes of work, and indicate the place in which each is to work. If within ten days the number of voluntary enlistments for civil work were insufficient to meet the national needs, the prefects would fill the vacant places by compulsion. In making calls for service regard would be had to capacity for the kind of work with respect to which there was deficiency, and the calls would be made according to age, beginning with the youngest. Persons called up would be paid at the rates usual in the locality for the class of work on which they were employed. A right of appeal is given to a departmental committee consisting of representatives of the ministries of war, munitions, agriculture, and labour, and of employers and workmen. Men employed in agriculture before December 1st, 1916, would not be put to work which would involve a change of residence, but might be required to work on any land in the neighbourhood for which labour was required. Men legally found incapable of work, permanently or temporarily, and disabled men discharged from the army would be exempt, as also young persons between the ages of 16 and 20 apprenticed or attending classes in a college or school. There would be power to exempt officials in public employment if found to be indispensable for the service. Persons already employed in established enterprises or works of national importance would be exempt, and the employments to which exemption would apply would be determined by an order in council. The penalties to be imposed for disobedience to the law or orders made under it would be imprisonment for six days to three months and a fine of from 16 to 10,000 francs, either or both. There is no exception for the medical profession, but most French doctors under 60 were called up for military service on the outbreak of hostilities.

THE GENERAL INFIRMARY AT LEEDS.

FOUNDED mainly by the efforts of the eminent citizen and surgeon, Mr. William Hey, F.R.S., in the year 1767, the General Infirmary at Leeds has long been known in England as a most excellently managed institution doing first-rate work. We have before us an interesting pamphlet[1] in which the material circumstances of its growth are fully set out for the benefit of the general reader. A hundred and fifty years ago Leeds had about 17,000 inhabitants but no hospital. The General Infirmary was then opened with twenty-seven beds, a matron receiving a salary af £10 a year, and a nurse with a yearly salary of £5. Within a year the building of a new infirmary was taken in hand, and in 1771 the first patient was admitted to a hospital—the old infirmary of modern times—that continued in use until 1869. In this year the new infirmary was opened. It was designed by the architect, Sir Gilbert Scott, on the pavilion principle, in imitation of the Herbert Hospital at Woolwich and the Hôpital Lariboisière at Paris. At the present time Leeds has a population of about half a million, and its General Infirmary has grown into a collection of buildings in every way worthy of so large and prosperous a city. In 1915 it treated nearly 10,000 in-patients, and there were over 120,000 out-patient attendances in its various departments. During the last few years the utility of the new infirmary has been much increased by a great scheme of extensions designed to perpetuate the memory of the late King Edward VII, at a cost of some £150,000. An excellent series of illustrations shows clearly the continual growth of this important hospital from its early days down to the present time. Such progress is the best possible evidence of the devotion of the many citizens of Leeds who have given their best thought and care to the welfare of their General Infirmary; no less does the list of the honorary staff since its foundation contain many names distinguished in the history of medicine and surgery. Perusal of the pamphlet leaves the reader with a conviction that an institution so well served on all sides in the past can look forward with

[1] *A Historical Sketch of the General Infirmary at Leeds*, 1767-1916. Leeds: R. Jackson. 1917. (Post 8vo, pp. 44; illustrated.)

confidence to the future. It is, therefore, perhaps needless to add that in Leeds, as in other cities, the expenditure on hospital needs ever outstrips hospital income.

TYPE-READING FOR THE BLIND.

AT the meeting of the Röntgen Society on February 6th Mr. Fournier d'Albe, D.Sc., demonstrated his optophone, an instrument designed to enable sightless persons to read ordinary type by ear. The device depends upon a careful optical and telephonic system in which the action of selenium in response to light plays an essential part. The greater portion of Dr. d'Albe's lecture was, indeed, concerned with the properties of selenium, the rare element which stands on the threshold between metals and non-metals, and which was discovered by Berzelius exactly a hundred years ago. The applications of selenium in photometry, telegraphy, phototelegraphy (or the transmission of images along the wires), television, and the automatic lighting of lighthouses and buoys are manifold, but some of them at present are of more theoretical than practical interest. The experiments with the optophone were far advanced before the war, but it is essential to have an intense line of light, such as is obtainable by means of the Nernst lamp, and since the war began this particular filament could not be obtained. Lately, however, it was found that the new half-watt lamp will give the line of light required, and the experiments were renewed. The lamp is made to illuminate a perforated disc which revolves by the action of a motor, and the image of luminous dots thus produced is made to converge upon an aperture in a slab over which a line of letterpress is slowly passed. The different patterns of light thus reflected from the type fall upon a set of selenium bridges which are connected by a telephone relay, and a musical frequency is set up. The sounds which are carried through to the telephone receiver are characteristic of each letter in the type, and what the learner has to do—a task obviously requiring long practice—is to pick up this code, and recognize the note which each differently shaped letter of the alphabet makes as it passes. The maximum sound is heard when the paper exposed through the aperture is white and the minimum when it is black, and the range of difference between these extremes covers all the configurations of printed characters. The system may equally be applied, given patience and memory on the part of the learner, to other letterings than Roman. Dr. d'Albe's demonstration was carried out with large single letters, and it appeared to be rather the interruptions than the sounds themselves which were distinctive. By using a focussing device he claimed that it was possible to read print of ordinary size, and that a system of careful alignment would enable the learner ultimately to follow the column of a newspaper or a page of a book.

TETANUS AFTER "TRENCH FOOT."

SIR DAVID BRUCE called attention in the JOURNAL of January 13th (p. 48) to the occurrence of tetanus after trench foot. Fifteen cases had been recorded within a few weeks, and in eight of these, of which details were obtained, the disease was severe; six of the patients died, two cases after only one day's illness, three after two days' illness, and one after five days. This, as he said, was a return to the picture of tetanus before prophylactic injections were in use, and he urged any medical officer who might be in charge of a case of trench foot to give a prophylactic injection of antitetanic serum, and to repeat it at intervals of seven days until the wounds were clean. This advice is reinforced by a communication made to the French Academy of Sciences by Drs. A. Lumière and A. Astier. They stated that out of ninety cases of tetanus received in the Lyons hospitals since the beginning of the war in five the disease followed frostbite of the feet. This is a ratio of 5.55 per cent., truly a very large proportion. While admitting that the tetanus bacillus may display a preference for the foul ulcers caused by severe frostbite, they agree that the more reasonable explanation is that the usual prophylactic injection of antitetanic serum was not given.

SOME ECCENTRICITIES OF INDIAN OPHTHALMIC PRACTICE.

IN a paper read at the Oxford Ophthalmological Congress last July, and published in the *British Journal of Ophthalmology* for February,[1] Colonel R. H. Elliot, I.M.S., gives an account of the treatment of diseases of the conjunctiva by Indian pretenders to special knowledge. At certain seasons of the year catarrhal ophthalmia is exceedingly rife, and for the most part the treatment of these cases is, he says, in the hands of women. It is commonly thought that the Indian woman is a nonentity, but there could be no greater mistake; both in sickness and in health the Indian woman is a factor to be reckoned with. Where doctors are scarcest her responsibilities are greatest, and she does her best to rise to them without fear of failure. Most Indian wives and mothers have favourite prescriptions. Their remedies are very diverse. Some are comparatively harmless; for example, human milk, which, especially when squirted into the eye straight from the breast, has a high reputation in India, as it had once in this country, for its healing power, and possibly something to recommend it. Others are the quintessence of danger, and such are those prepared in the "laboratories" of the amateur village expert, usually an old lady whose reputation as eye doctor rests on her weight of years. She collects her herbs in the right phase of the moon and compounds them by means as devilish as her intentions are angelic. Her confidence is unshaken by failures. "It is written on the forehead of certain of her patients that they should 'go blind'; and what can she do to alter the inexorable decrees of fate? Meantime, if they will sit down she will place precious medicine in their eyes." India has much confidence in "specialists." A man will travel hundreds of miles to see such a one, and spend the savings of a lifetime on the journey. He addresses the surgeon "as his God, his father, and his mother," surrenders himself, as at a shrine, for the cure to be performed. The native specialist uses pastes for insertion within the lower eyelid. Common ingredients of such preparations are the juice of the leaves of the tamarind tree (which is very acid and irritating), alum, various kinds of pepper, iron filings, human milk or urine, and cowdung. Each specialist has a personal receipt for the preparation of his or her choice. Many cases are seen of people, even families of children, blinded by these preparations. In cases of severe fever the native medicine man is in the habit of awaking the sick man out of his stupor by the insertion of some of these preparations within the eyelid, and not seldom the cornea is destroyed. Others use a variety of drops, some intensely irritating, whilst other applications, such as human urine, owe their potency for mischief to the organisms they contain. It is said that many midwives make a practice of washing the infant's eyes in the mother's urine immediately after birth. Strange methods of treatment are to be found. Rubbing the sole of the foot corresponding to the eye affected to "bring down the heat from the head" is one, the treatment of presbyopia by anointing the eyes daily with an ointment made of butter and the ashes of rabbit's dung is another. Corneal trouble is treated by engaging a friend to chew raw onions and with his mouth full of the half-masticated mass to blow on the affected eye. Trachoma, though a disease completely remediable to prompt and proper treatment, takes an appalling toll of sight in India. But the affected man waits until the harvest is gathered, or for friends to go with

[1] Vol. i, No. 2. London: Geo. Pulman and Sons. (Price 4s. net, or 31s. 6d. yearly.)

him to the hospital. More go to the native specialist, who scrapes the inner surface of the eyelids, rubbing in burned powders, a treatment that leaves black streaks in the scarred tissue. Deep scars of the skin may be found, the effects of past cauterizations made to evert the inturned lids. Sometimes these succeed, more often they fail or destroy too much tissue, with unfortunate results. The malingerer rubs some lime, scraped from the cottage walls, into his eye to produce conjunctivitis. It is recognized by the limitation of the effect to the lower conjunctiva and the milky appearance of the part. The actual lime is never seen. The trick was once much in vogue with the Madras police, but the recognition of the origin of the malady soon stopped it. Occasionally the trick leads to blindness from an overdose. Astrology plays a great part in determining the time for medical proceedings. An operation can only be performed at a favourable season; it is useless to oppose the ideas of the patients, for hope is the essence of success, but a little tact may persuade the astrologer that the surgeon's time is the favoured time.

THE PSYCHOLOGY OF THE MYSTIC.

THE psychology of the mystic has always been a riddle to the average man, to whom the combination of the most exalted piety with sound business and administrative capacities must inevitably appear something of an anomaly. That such anomalies exist, however, and that the visionary is often endowed above his fellows with practical abilities of no mean order, is proved by the lives of many mystics, such as the great Spanish reformer St. Teresa, Joan of Arc, and the famous St. Bridget of Sweden, of whom a most interesting account by Mr. A. W. Taylor appeared in Part I, vol. viii, of the *Saga Book of the Viking Society for Northern Research*. St. Bridget gave early promise of those qualities which were to make her one of the most powerful influences in ecclesiastical politics during the fourteenth century. The woman who in later life had the courage to rebuke kings and princes, and even the Pope himself, was from the first a mystic and a psychic in the fullest sense of the word. "From her early childhood," says Mr. Taylor, "she saw visions and dreamed dreams. She fell into trances and received revelations; she was able to distinguish good men from bad, thanks to an almost supernatural insight, long before the death of Ulf (to whom she had been married at the age of 13)." During her married life her judgement and good sense were of the utmost value to her husband; and after his death these were devoted to the service of humanity, then suffering from the precarious position of the Papacy and the selfish ambition of temporal rulers. St. Bridget strained every nerve to induce the French and English kings to put an end to the Hundred Years' War, which was then devastating France and Burgundy, and took Pope Clement VI severely to task for his desertion of Rome for Avignon, although in neither case, apparently, were her efforts of much avail. It is a curious instance of the vagaries of heredity that, whilst St. Bridget's daughters were all extremely religious, neither of the two sons who survived their boyhood appear to have inherited their mother's mysticism, one being a rough soldier, and the other, who had won the approval of Joanna of Naples, a typical dandy of the period. The child who seems to have resembled the saint most closely was her daughter Catharine, who was her mother's constant companion during life, and, after her death, carried on her work as Abbess of the great Brigittine Abbey of Vadstena. Much of the Swedish literature during the fifteenth century proceeded from the Brigittine convents of Vadstena and Nadendal; and many of these books were written in what was known as the "Brigittine language," a mixture of Danish and Swedish, adopted for the purpose of promoting a closer union between the three Scandinavian kingdoms.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.[1]

THE present portion of the *New English Dictionary*, comprising words between Sullen and Supple, does not contain, with the single exception of one large group, many purely medical terms. Comparatively uninteresting words are carefully recorded, such as supinator, sunstroke, sunspot (the pathological, not the astronomical), and the long list of the supers-, such as superauricular, superfetation (the spelling with *e* is preferred to that with *oe*, although both are given), superimpregnation, superoccipital, supersalt, etc.; they are all most carefully defined and illustrated by apt quotations, but neither etymologically nor historically do they call for much remark. The one large group is that which centres round the word sulphur; indeed, the first few pages of this part of the *Dictionary* are almost lost to sight in a cloud of sulph-, sulphato-, sulpho-, sulphureo-, and sulphuric compounds, numbering fifty-nine if only main words are enumerated, and some hundreds if all the subordinate ones are taken count of. Sulphur itself has a wonderful series of illustrative quotations, and not a few piquant notes, such as "Sulphur has been associated with the fires of hell, with devils, and with thunder and lightning." Echoes from the medical past come in such sentences as "What stimulants are more active than salt and sulphur?" "Good results have been got by burning sulphur in the rooms inhabited by the child"; and the lines, "The blood impure sulphur's sharp grains alone have strength to cure." Other echoes are found in the terms balm of sulphur, magistery of sulphur (milk of sulphur), oil of sulphur, salt of sulphur, and spirit of sulphur. Not all medical men perhaps are aware that when sulphur of ivy is asked for the druggist is prepared to supply sulphur vivum (native or virgin sulphur). Sulphurwort is the umbelliferous plant known more popularly as hog's fennel. The less distant past is reflected in such comparatively young terms as sulphatite, sulphine, and sulphion (hypothetical radicals), sulphonal (the first illustrative quotation is of the year 1889), sulphone, and sulphuryl. Such useful arrangements as sulphur baths and such gifts of the earth as sulphur springs are not forgotten; and the rare verb, to sulphur, is referred to in Harriet Martineau's sentence, "the season had not begun, few having been yet sufficiently sulphured and bathed elsewhere to come here to be braced." The *Dictionary* more than maintains its good past record of up-to-dateness, for it records summer time in its new sense of "the standard time (in advance of ordinary time) adopted in some countries during the summer months (in the British Isles in 1916 from 21 May to 30 September)." It also gives the Kaiser's "place in the sun" phrase of 1912, tracing it to Pascal's *Pensées* ("c'est là ma place au soleil"); and it gives Bernard Shaw's superman (Nietzsche's Übermensch) its place in the sun. As will have been noted, it is no less in touch with the most recent medical words.

NEW YEAR'S HONOURS.

THE deferred list of New Year's honours given in respect of civilian services was issued on February 12th. It contained the names of six members of the medical profession. Dr. Arthur Newsholme, C.B., medical officer to the Local Government Board since 1908, has been advanced to be K.C.B., and Dr. Robert Armstrong-Jones, who retired last year from the office of resident physician and superintendent of the London County Asylum at Claybury, and who is consulting physician in mental diseases to the military forces in London, with the rank of honorary Major R.A.M.C., receives the honour of knighthood. Dr.

[1] *A New English Dictionary on Historical Principles.* Vol. ix, Si—Th. Part for January, 1917, Sullen—Supple. By C. T. Onions, M.A Lond., Hon. M.A.Oxon. Oxford: At the Clarendon Press; London, Edinburgh, New York, Toronto, Melbourne, and Bombay. Oxford University Press: Humphrey Milford. Price 2s. 6d. net (60 c.).

Charles Lane Sansom, Principal Medical Officer, Federated Malay States, is created K.C.M.G., and Sir Robert William Burnet, physician to His Majesty's household, K.C.V.O. The Foreign Office list contains also the names of Dr. John Warnock, director of lunatic asylums, Egypt, and Dr. William Andrew Betts, director of the Municipal and Local Committees of Egypt, both of whom have received the C.M.G.

THE annual courses of lectures at the Royal College of Physicians of London will be given this term as follows: The Milroy Lectures by Dr. W. J. Howarth, Medical Officer of Health for the City of London, on meat inspection, with special reference to the developments of recent years, on February 22nd, 27th, and March 1st; the Lumleian Lectures, by Dr. G. A. Sutherland, physician to Paddington Green Children's Hospital, on modern aspects of heart disease, on March 13th, 15th, and 20th; and the Goulstonian Lectures, by Dr. C. H. Miller, assistant physician to the London Hospital, on paratyphoid infections, on March 22nd, 27th, and 29th. The lectures will be given at the College at 5 o'clock on each day.

Medical Notes in Parliament.

The Debate on the Address.

THE new session of Parliament which opened last week is likely to have a large and varied interest as regards the number of measures to be put forward "for the prosecution of the war." The debate on the address occupied only two days. The only amendment that was taken was one by Mr. Leslie Scott touching agriculture and food production. It brought informing speeches in reply from Mr. Prothero (Minister of Agriculture) and from Captain Charles Bathurst, the Parliamentary Secretary to the Food Controller. They frankly acknowledged the difficulties of the situation, but indicated the various steps which were being taken to provide farmers with labour to replace the men gone into the army, and also what was being done to provide machinery and fertilizers. Mr. Leslie Scott, while not professing to be fully satisfied, withdrew his amendment.

Amongst the notices given by private members to raise discussion on coming votes is one by Mr. Herbert Nield "on going into Committee of Supply on the Army Estimates to call attention to the action of medical boards in passing recruits for service and to move a resolution."

The Vote of Credit of 550 millions for war services until the end of May occupied Monday's sitting, and was carried without a division after a general debate. The many matters involved will come up for debate on separate classified votes.

War.

Disabled Sailors and Soldiers.—As it happened, the first notice of amendment tabled was one by Sir George Toulmin to express regret that no announcement was made of a complete scheme of pensions and allowances for soldiers and sailors, including, of course, the disabled. But, on the same day, the Pensions Minister (Mr. Barnes) gave notice of his intention to introduce a bill, and, although it is quite possible that this Government measure will not cover the terms of Sir George Toulmin's amendment, the early intimation had the effect, under Parliamentary procedure rules, of preventing a debate. Sir George asked the House to affirm "that no system for dealing with men discharged from His Majesty's Services unfit from wounds or disease will be satisfactory which does not provide for medical, surgical, and institutional treatment where necessary, and for a continuation of dependants' allowances until the discharged man is again in civil employment or an adequate pension is allowed." In the Commons, on February 12th, Mr. Will Thorne asked the Financial Secretary to the War Office whether the Statutory Committee forwarded to the War Office a resolution on September 21st to the effect that the Admiralty and the War Office should be requested to retain in their hospitals all invalided men requiring active treatment; whether a deputation on the subject from the Statutory Committee and the Central Medical War Committee waited upon the Secretary of State for War on November 3rd; whether an immediate reply was promised; whether an official reply had yet been sent; and whether Mr. Forster was willing to take the responsibility for refitting these men for industrial life when they could not be returned to active service. Mr. Forster replied that he and the Secretary of State for War had been in close touch with the Pensions Minister (who represents the Statutory Committee) on this question for some time past, and that the latter would shortly make a statement. In reply to Mr. Hay Morgan, Mr. Macpherson (Under Secretary for War) said that the report of Sir Henry Norman on the treatment and training of French disabled soldiers would be placed on sale. It is understood that this report was completed by Sir Henry Norman last October, and was then submitted to the War Office, but no decision was then taken as to its publication.

Sailors Invalided for Pulmonary Disease.—On Tuesday Mr. Brunner asked the First Lord of the Admiralty whether, if naval officers who were sent into hospital suffering from lung trouble, contracted on service, required special treatment, they had to provide it at their own expense; whether they had to give an undertaking to indemnify the Admiralty against all claims; and whether, if, at the expiration of ninety-one days they were not absolutely cured, they were immediately invalided out of the service. Sir Edward Carson said that naval officers were admitted into hospitals with pulmonary tuberculosis contracted in service, and were treated in a naval hospital at the expense of the Admiralty unless they wished to be treated in an outside institution, when they had to undertake their own care and treatment and the expense of such treatment. They were not invalided after ninety-one days, but at the expiration of this period they were put on half-pay. These regulations, in his opinion, were not satisfactory, and the question of an alteration in the regulations affecting the care of these cases was now before the Board. Sir Edward was asked whether the position of the men would also be considered, and nodded assent.

Bonesetters.—In the Commons, on February 13th, Mr. MacVeagh asked whether the War Office still adhered to its objection to using "the skill of experts in manipulative surgery," whether some of the leading exponents of this method of treatment had offered to give their services free to suffering soldiers, and their offers had been rejected; and whether there was any reason for this rejection "beyond the objections of the medical faculty against the recognition of unqualified practitioners." Mr. Macpherson referred the questioner to the answer given by Mr. Tennant last March to the effect that it was not the intention of the Army Council to direct the medical authorities to employ unqualified men to treat military patients. Were this done, from no quarter would there be a louder outcry that our soldiers were not receiving the necessary skilled attention than from members of the House of Commons. Mr. MacVeagh then asked whether the War Office declined to go into the question further, and Mr. Macpherson replied in the affirmative. Mr. MacVeagh further asked if the Government would appoint an independent commission composed of men of high attainment, but not members of the medical profession. To this Mr. Macpherson replied that the rule was quite clear; the War Office could not open the Army Medical Service to any one whose name was not on the *Medical Register*. Mr. MacVeagh next asked if the Army Medical Department would continue to allow hundreds of thousands of soldiers "to go through unnecessary suffering on account of professional prejudice." Mr. Macpherson replied that nothing of the sort happened. The greatest attention and skill had been bestowed on the officers and men of the army, and it had received on all hands the highest appreciation. Mr. MacVeagh was not satisfied, said he would put down a further question, and threatened, if the reply was not satisfactory, to raise the matter later on a motion for the adjournment.

DRS. A. J. CHALMERS AND N. E. WATERFIELD have published in the *Journal of Tropical Medicine* (July 15th, 1916) an account of the bacteriology of a case of paracholera due to a vibrio identified as a slightly pathogenic strain of *Vibrio gindha*, Pfeiffer, 1896, an organism first described by Pasquale at Gindha, in Erythrea, five years earlier. Drs. Chalmers and Waterfield give an analysis of the difficulties met with by investigators who attempt to bring order into the very complex group of comma-shaped organisms giving rise to cholera and cholera-like diseases. They have been impressed with the extreme confusion existing with regard to the paracholera vibrios, and develop a scheme or systematic method of working that should in future assist in the identification of these various but closely allied bacteria. This scheme enumerates seven general diagnostic characters for investigation, and some thirty special diagnostic characteristics that require examination. They hold that the *Vibrio gindha* may be more widely distributed in Africa and more common than is at present realized.

THE WAR.

SURGERY AT THE SIEGE OF KUT.

MAJOR C. H. BARBER, I.M.S., records his experience at the siege of Kut.[1] The surgeons had a somewhat unique opportunity of watching a good many cases of wounds from the time of their infliction to the end, and of noting the effect of various, mostly adverse, circumstances. Among the favourable influences were the very short distance between the firing line and a stationary hospital, and the short time between the infliction of the injury and the application of surgical treatment. Both these factors tended very materially to reduce the mortality and the permanent invaliding among the severely wounded. The unfavourable conditions, which probably more than counterbalanced the favourable factors, were (1) the unhygienic surroundings in the improvised hospital buildings; (2) insufficient personnel, equipment and stores; (3) slow starvation and absence of medical comforts; (4) the prevalence for part of the time of scurvy and beri-beri owing to improper and insufficient food; (5) the adverse effect on the *moral* of the wounded produced by the constant bombardment and mental strain. From December 5th, 1915, to April 29th, 1916, 2,418 wounded were brought into the hospitals; of these, 488 died, 1,680 were returned to duty, and 250 remained for invaliding. Of the men "returned to duty" a good many remained in poor health and crippled in one way or another. There was a large number of head cases. Many were operated on, but the results were disappointing. Penetrating and perforating wounds of the chest did well as a rule, and the lungs rapidly recovered their full working power. Surgical emphysema was common, pneumothorax and serious haemothorax somewhat rare; suppuration in a haemothorax was rare; haemoptysis was usually slight, and did not as a rule last more than two days.

After the first fortnight Barber operated with very encouraging results in all cases of penetrating and perforating wounds of the abdomen in which there seemed to be no doubt that the missile had entered the peritoneal cavity, causing injury to the intestine; laparotomy was performed, the intestinal lesions were sewn up or excised, and the peritoneal cavity cleaned and drained. Cases when left alone had a 2 per cent. chance of recovery, while 25 to 30 per cent. of those operated on recovered. Had the men been in better condition and good post-operative treatment been possible the percentage of recoveries would have been considerably higher.

Compound fractures were common and difficult to treat, but thanks to early and thorough cleaning and drainage the results were not bad; several men, however, died from septic absorption when scurvy and starvation began to exercise their injurious influence. In thigh cases "sand-bags and extension" was the most satisfactory method. Aneurysms were few, and nearly all recovered after operation. Nerve lesions were also comparatively rare, and did not, as a rule, call for operation. The amount of sepsis was not great, having regard to the unhygienic surroundings, and only three cases of gas infection, with two deaths, occurred. Bomb wounds, in spite of all precautions, almost invariably became septic, with a thin, evil-smelling discharge, and deaths from this cause were numerous. The stock of hydrogen peroxide gave out early in the siege. Secondary haemorrhage was rare; there were not more than half a dozen cases, and some of these were complicated by a scorbutic element.

Of tetanus there were thirty cases; only four recovered, despite the fact that the incubation period in all but four cases was six days or more. Of the thirty cases, nine were shell and four bomb wounds; only one of these (shell) recovered. In twenty-one of the cases the first symptom was trismus, whilst of the remaining nine, five began with local spasms, two with general convulsions, and one with torticollis. In one-half of the whole number death occurred within forty-eight hours; in the remainder the period varied from three days to three weeks. In the early days of the siege, when most of the cases occurred, very little antitetanus serum was available; only seven or eight cases were treated with it, and of these three recovered; a fourth recovered with treatment by local subcutaneous injections of hydrogen peroxide. Later a stock of serum was received by aërial post, and was used prophylactically in many cases. Several cases were treated by carbolic acid injections but without success.

In the second half of the siege the steadily diminishing ration, the want of invalid food, and scurvy among the Indian troops and beri-beri among the British, adversely affected the healing of wounds. In many cases in which scurvy developed the healing process stopped, and in others the patients quickly died of exhaustion or septic absorption from suppuration of moderate severity. In beri-beri cases wounds, especially granulating wounds, healed very slowly. Among the Gurkhas wounds healed more frequently by first intention and more quickly than in others. These men were generally in very good condition and very clean; they ate horseflesh as soon as it became necessary, and did not suffer from scurvy. In Sikhs, Pathans, and Punjab Musulmans wounds healed well as a rule, and the process was not much affected by scurvy, but in the Mahrattas, among whom that disease was at one time very prevalent, wounds were seen at their worst, recuperative power being very low. The Arabs seemed to possess a most virile constitution; some of the civilian population of Kut recovered from very severe and extensive shell wounds and from injuries of the head and abdomen the like of which seemed nearly always to be too much for any other class of men. They also survived the shock of major surgical operations with comparative ease.

Of major operations about 200 were performed. The supply of chloroform was ample. During the first two-thirds of the time there was also a good stock of surgical dressings. Among major operations were the following: Craniotomies, 32; abdominal sections, 40; amputations, 36; ligation for aneurysm, 6. The results of craniotomy were, on the whole, disappointing. Amputations did well. Conservative treatment of limbs became less and less possible as the food supply diminished. Dressings were sterilized by boiling in water and were then wrung tightly out of 1 in 4,000 mercury perchloride. The use of dry gauze was discouraged, as there was no means of keeping it sterilized. The missiles were of the usual kinds. Shell wounds were nearly always serious, both as regards their size and local effects and the very marked constitutional symptoms caused. Locally, there was invariably much bruising of the surrounding tissues when a piece of the case itself inflicted the injury, and the skin for some distance round nearly always died. It was necessary, therefore, to be very chary of stitching up such wounds. The shock of shell wounds was often very severe; sometimes it did not reveal itself for thirty-six hours, and frequently it proved fatal. Wounds caused by bombs, both grenade and aërial, were dangerous and generally multiple. They did not cause the same constitutional shock as the shell, but the danger lay in the difficulty in finding the particles and in the virulent sepsis they quickly produced. The *x* rays were sorely missed.

[1] *Indian Medical Gazette*, December, 1916.

TWENTY MONTHS' SURGICAL FIELD SERVICE WITH THE GERMAN ARMY.

IN a retrospect of twenty months of work in a main dressing station and field hospital, Professor H. Coenen, of Breslau, who has been serving as a field staff surgeon, sketches in broad outline the entire field of surgical activity as exhibited in his section of the Western front.[1]

Referring, in the first place, to the great differences observed in wounds received in mobile as compared with stationary or trench warfare, which has become to a large extent mine warfare, he enumerates the chief characteristics of mine wounds. The shattering of the wall of the mine into innumerable small fragments results (1) in the wounds being multiple; (2) in consequence of the irregularity of the fragments the wounds are markedly lacerated; (3) owing to contamination with earth they suppurate; (4) the momentum of the fragments not being great, they readily lodge in the soft parts; and (5) the explosion may cause rupture of the tympanic membrane and consequent otitis.

[1] *Kriegschir.*, H. 27, *der Beitr. z. klin. Chir.*

Shock: Rigor Mortis: Heart Wounds.

As an example of the slighter hysterical reactions is mentioned a case of blindness following bullet wound of the occipital region. On removal of the bullet, which lay quite near the surface, recovery of sight was immediate. Severer nervous effects—those following an explosion of grenades, for instance—had at times some clinical resemblance to paralysis agitans. With a scared expression and widely open eyes, inability to answer questions or to speak, was associated a continuous tremor of the hands. At other times these signs of irritation were replaced by collapse and somnolence; in such a condition death often supervened.

Cataleptic rigor was a common phenomenon on the battlefield, the limbs being usually in the attitude of attack or defence. In bullet wounds of the heart death was mostly so sudden that cataleptic rigor ensued. A bearer fell, wounded in the heart; convulsions followed, with death in a few minutes, and the body immediately became rigid.

Wounds of the Upper Air Passages.

The severest cases were beyond treatment, haemorrhage or acute oedema of the larynx proving rapidly fatal. In cases that called for treatment the respiratory obstruction arose either through surgical emphysema or through oedema resulting from infection. The onset of dyspnoea in the former was gradual, increasing with the increase of the emphysema until inspiratory retraction of the thorax occurred. Oedema of the upper air passages was of constant occurrence in severe bullet wounds of the jaw with involvement of the tongue and floor of the mouth. The prognosis in such cases was unfavourable, and one-third of the cases died from pneumonia or secondary haemorrhage.

Injuries of Blood Vessels.

Gunshot wounds of the large body cavities were usually associated with marked haemorrhage. External haemorrhage was slight in abdominal wounds on account of the mobility and elasticity of the tissues surrounding the bullet track. In the skull, on the other hand, the track remained open, and external haemorrhage was the rule. Wounds of the thorax caused both internal and external haemorrhage; the external wound often gaped, and on turning the patient over a stream of blood might flow from it.

The action of the soft parts in plugging the wounded vessel was much greater in the limbs than in the trunk; hence wounds of the limb vessels often ran a symptomless course, or aneurysms developed, or secondary haemorrhage occurred from shifting of the soft parts, the rising blood pressure, or infective softening of the thrombus. Marked painful swelling of a limb after gunshot wound indicated the severance of a large artery. If in such cases the external haemorrhage did not recur while the soft parts enclosed the haematoma, the formation of an aneurysm was to be expected. Persistently painful haematomas therefore suggested a slowly developing aneurysm. Treatment of primary haemorrhage was called for generally in connexion with arteries of medium size—such as the tibial, radial, and ulnar. Only exceptionally did wounds of the larger arteries reach the dressing station, immediate arrest of the haemorrhage having by good fortune been possible or the wound itself being small and linear. Most cases were rapidly fatal. Coenen states that he had met with gangrene following the application of the elastic band in two cases, and in these the band had been applied for over twenty-four hours.

Excision of the wounded segment of the vessel, with subsequent anastomosis, was performed on five occasions—on the femoral artery thrice; on the femoral vein twice. None of the former was successful; in the latter the result was doubtful, the vascular area operated on being venous. The conclusions drawn from these cases were that anastomosis should only be attempted in the certain absence of infection, and then only in recent cases; after a few days' delay it was too late. Anastomosis after excision of a segment of the femoral artery, successful so far as the operation on the artery was concerned, was performed in the case of a bullet wound of Scarpa's triangle. Infection was absent. The circulation was fully re-established in the peripheral part of the femoral artery, but the foot remained white and cold. The operation was performed five days after injury; the man had, however, lain in the open during the whole of that time.

The operation was more satisfactory when undertaken as an operation "of choice," as in the excision of aneurysm, or in vital blood transfusion, a method Coenen considers preferable to intubation of the artery into the vein; he employed it in five cases. A severe injury of the knee, opening the joint and lacerating the soft parts, was treated on conservative lines; suppuration and secondary haemorrhage occurred and the limb was amputated. As the result of the fever and loss of blood the patient was in a state of extreme exhaustion: of waxy pallor, with thready, scarcely perceptible pulse, completely apathetic. The red cells numbered 1,700,000. Saline infusions, camphor, and digitalis failed to diminish the collapse. The radial artery of the patient's sister was then connected by circular suture with the median vein and transfusion maintained for thirty-two minutes. The pulse and the colour of the conjunctivae immediately improved. Later in the day the blood count was 2,900,000; on the fourth day 2,500,000, at about which figure it remained for some time. In five weeks the patient was discharged, the blood count then being 4,000,000.

Gas Phlegmon.

In Coenen's experience gas phlegmon was the more dangerous the sooner it set in after wounding, and deep phlegmon endangered life and limb more than the superficial or "epifascial" form. He believes that the severe form was due to Fraenkel's bacillus, and that the slighter might arise from gaseous decomposition of pus or sodden tissues, caused by putrefactive organisms or streptococci. Between the rapid gas gangrene, extending from the limbs to the trunk, all gradations occurred to a purely localized gas abscess or collection of frothy pus in the bullet track.

The symptoms he considers characteristic. When brought in, the patient did not complain of pain; the expression was anxious, the face cyanosed; the pulse small and respiration deep and prolonged. The temperature might be normal at first, but rose subsequently. The body was cold and moist; the patient was drowsy, but consciousness remained clear. From the wound, which showed no sign of suppuration, bubbles of gas were discharged when the limb was moved; the muscles were softened into a dark red or black mass, from which a fetid and almost characteristic odour was given off. In the skin around livid patches were present, and rapidly increased in size, the limb at the same time swelling and becoming crepitant to the touch. If now amputation succeeded in arresting the disease, the patient recovered with surprising rapidity. Otherwise, the gangrene progressed, jaundice and vomiting set in, and death rapidly occurred from heart failure, consciousness being unclouded to the end. If it was impossible to amputate through sound tissues, owing to the gangrene having reached the trunk, exarticulation at the hip or shoulder was the operation of choice, and out of seven such cases the result was successful in five. Coenen states that in cases in which the gas gangrene was superficial or epifascial it usually yielded to multiple small incisions carried down to the fascia. He records two cases of gas phlegmon of the penis and scrotum, two of stercoral phlegmon following wounds in the gluteal region involving the rectum, and one in which a bacteriological examination appeared to indicate that streptococci were the cause.

Prognosis, largely influenced by the severity of the wound, depends on the form of the phlegmon. Coenen distinguishes three forms: (1) Gaseous sepsis with extreme collapse, fatal in a few hours or days, without suppuration, and often without obvious necrosis of the muscles, only a few necrotic foci and gas bubbles being visible. (2) The epifascial cases, which healed after incisions. (3) A form of medium severity, which, by removal of the limb, especially by exarticulation in the severer cases, and by making deep long incisions, might recover. After arrest of the phlegmon, however, these patients might die from exhaustion.

Abdominal Injuries.

Coenen states that at the present time almost every surgeon holds that all cases of gunshot wound of the abdomen should be operated on, provided that the favourable period—six to twelve hours after wounding—has not elapsed and that conditions are favourable. These con-

ditions, briefly stated, were that the laparotomy was undertaken with the aid of expert assistants only, in a room in which aseptic conditions had been established, and by an expert operator. In mobile warfare each case must be dealt with separately, arrest of haemorrhage and tracheotomy alone excepted; and a message should be dispatched to the surgeon to prepare the operating room. The much disputed question whether abdominal cases should be transported or not is, Coenen considers, rather beside the point; in principle, every case should be transported as soon as possible to the nearest place where suitable conditions of operation exist. The following case illustrates these remarks:

A soldier received a bullet wound in the abdomen; almost immediately afterwards he was placed in a motor car and conveyed six kilometres to the Feldlazarett. He was pale and collapsed, and had frequent vomiting; the aperture of entry was in the linea alba, the abdominal wall was rigid in its lower part, and the pulse was 110. Laparotomy five hours after wounding. There was blood in the lower abdomen, but no signs of peritonitis. Five bullet wounds were present in the ileum, and in one of these the bullet had remained lodged, being half within the lumen, half in the peritoneal cavity. The perforations were sutured, the peritoneum freed from blood, and the abdominal wound closed. There was some vomiting on the next day, but after that recovery was uninterrupted. The operation was performed in a peasant's house, which had been prepared for it.

Coenen advises operation, in suitable conditions, in all cases (1) where the direction of the track makes injury of the viscera probable; (2) where marked rigidity of the abdominal muscles is felt and persists, notwithstanding the warmth of the bed; (3) where the collapse and the patient's features render wound of the abdominal cavity probable; (4) where vomiting is present.

Wounds of the Bladder and Urethra.

In these wounds, which were not uncommon, suture was not performed in any instance, because other symptoms stood in the foreground. Nor was external urethrotomy resorted to, as the difficulty of keeping the catheter aseptic rendered it unsuitable as compared with the simpler method of cystotomy.

Wounds of the Thorax.

In almost all cases in which the pleura had been opened a limited amount of emphysema was present; in rare cases this reached enormous dimensions, the patient being inflated like a balloon. It was sometimes difficult to say at what spot the air was entering the subcutaneous tissue, but it was not usual for such large collections to arise through wounds of the chest wall. A marked swelling of the neck was of some value as indicating the mediastinum as the source of the emphysema. Coenen is inclined to believe that some information as to the character of the injury is at times to be deduced in these cases; a large emphysema rising to the neck from the mediastinum would in all probability, he considers, point to injury of a main bronchus or one of the larger tubes. He found rigidity of the abdomen frequently associated with severe gunshot injuries of the chest. It might be so persistent as to lead to the diagnosis of wound of the abdominal cavity where no such injury exists, as occurred several times in his own experience. After a brief reference to the almost hopeless cases of bilateral wound of the chest and those complicated with injury to the cord, the rule that an external pneumothorax should be converted into an internal is alluded to, and the following case cited:

A bullet striking the anterior surface of the left side of the chest passed upwards and inwards, forming a groove the length of the finger, from which the lung was prolapsed and hung down over the surface of the chest. The patient was white and pulseless. The prolapsed portion of lung showed no wound; it was replaced and the wound sutured. This was done four hours after wounding. During the next day the patient remained pale and the pulse could scarcely be felt. After this recovery was rapid, and the wound healed by first intention.

Gunshot Wounds of the Head.

Restricting his review to cranial injuries involving the brain, Coenen states that every field surgeon has had abundant experience of such cases, and therefore the lines of treatment have been ascertained with some degree of definiteness. As to prognosis, he considers wound of the brain the decisive factor; hence prognosis was worse in perforating wounds and those with retention of the projectile than in tangential injuries. The decisive factor as affecting surgical treatment was injury of the cranium; hence a tangential injury associated with much comminution was, as a rule, trephined, whereas a diametral shot with comminution limited to the apertures of entry and exit generally received conservative treatment. The brain injury itself could not be influenced by surgical means. There was a third form of injury, neither tangential nor diametral, in which a larger or smaller segment of the cranium was included. With regard to these "segmental" wounds Coenen suggested that the two forefingers (sterile) should be placed near the wound apertures and approximated along the line of the bullet track, deep palpation through the skin being made at the same time. If firm bony resistance is met with throughout, no operation should be performed, unless indicated from other signs. If comminution is felt to be present, the wound should be laid open. In short segmental shots the wound was generally laid open from aperture to aperture; in longer wounds an area was left midway between the apertures. Small bony fragments, injuring brain and dura, were removed; broader pieces still retaining a connexion with soft parts were left. These longer segmental wounds, requiring operation, merged imperceptibly into the diametral wound, and circumstances arose in which penetrating wounds also called for opening up. These circumstances, in the case both of perforating and long segmental shots, were: (1) Marked haemorrhage; (2) the onset of infection or a putrid odour; (3) epileptic attacks; (4) involvement of specially important brain regions—motor area, speech centre, visual area.

Retention of the projectile in the brain occurred in the diametral or the segmental types of wound, and the mortality was extremely high. The four points above mentioned are applicable also to these cases, and to them Coenen adds a fifth—general pressure phenomena or signs of local congestion, such as protrusion of the globe, where a bullet has lodged in the frontal lobe. Removal of the projectile, he considers, should be attempted, provided the operative interference necessary is not too great. When the bullet is lodged superficially its removal is desirable, since suppuration may occur around it; a more deeply placed bullet is, he thinks, much more likely to heal in aseptically.

Wounds produced by explosion of mines being generally small the surface wound tends to heal rapidly, but he found that suppuration was the rule around the fragments. He therefore incised and trephined primarily in such cases much more generally than in other bullet injuries of the brain.

Injuries of the Spinal Cord.

Among these generally unsatisfactory cases Coenen describes one in which operation was followed by recovery:

A grenade wound below the left shoulder blade was followed by paraplegia. *X* rays were not available, but from the symptoms it was considered that the spinal column had been injured at about the middle of the dorsal region and that the bullet had lodged. Laminectomy under local anaesthesia was performed twenty-six hours after wounding. The arches of the sixth and seventh dorsal vertebrae were found to be fissured and beneath them the dura contained the projectile, which was of the size of the finger-nail and 3 mm. thick. The cord had been split longitudinally and contused, but laterally its continuity was unbroken. The dural wound was trimmed and sutured; the external wound closed, without drainage. There was uncomplicated recovery.

Coenen found that the higher the lesion the graver the prognosis; and that lacerations of the cord were graver than compression by the projectile or bony fragments. Any operation undertaken should be done as early as possible. The indication he lays down for operation is the diagnosis that the bullet is lodged in the canal.

CASUALTIES IN THE MEDICAL SERVICES.

ARMY.

Died on Service.

MAJOR V. H. SYMONS, R.A.M.C.

Major Vivian Hood Symons, R.A.M.C., died in the Military Hospital, Tidworth, on January 29th, aged 38. He was the third son of the late Colonel C. E. H. Symons, of Colombo, was educated at Trent College and at Birmingham University, and took the diplomas of M.R.C.S. and L.R.C.P. London in 1901. He subsequently served as a civil surgeon in the South African war, and gained the

Queen's medal with five clasps. After acting as assistant house-physician at the Nottingham General Hospital he went to Australia, where he was medical officer of health at Charters Towers, Queensland. Returning to England, he entered the R.A.M.C. as lieutenant on July 31st, 1905, becoming captain on January 31st, 1909, and was promoted to major on October 15th, 1915. He went to France with the original British Expeditionary Force in August, 1914, and served there till invalided home. He leaves a widow and two children.

MAJOR W. WILEY, R.A.M.C.

Major William Wiley, R.A.M.C., whose death from nephritis, contracted on service, occurred at Ealing on February 12th, aged 37, was the son of Mr. William Wiley of Cork. He was educated at Cork Grammar School and Trinity College, Dublin, where he graduated M.B., B.Ch. with distinction in 1902. He entered the Royal Army Medical Corps in 1903. He went to France with the original Expeditionary Force, serving with No. 12 Field Ambulance. Subsequently he was in command of No. 142 Field Ambulance, and held this appointment, with the temporary rank of lieutenant-colonel, until invalided home on account of the illness that led to his death. He was twice mentioned in dispatches.

CAPTAIN C. E. A. HUDDART, R.A.M.C.

Captain Cuthbert Edmund Arnold Huddart died suddenly, at the age of 39, on January 29th, whilst on embarkation duty. He was the second son of the late Dr. C. H. C. Huddart of Etchingham, was educated at the London Hospital, and took the diploma of L.S.A.Lond. in 1902. For some years he was in practice at Gloucester Terrace, Hyde Park. His commission as temporary lieutenant R.A.M.C. was dated November 28th, 1915, and he was promoted to temporary captain after a year's service. He had served in Malta and Egypt for several months, and was proceeding to France in a few days. He married in June, 1908, Olga Florence, youngest daughter of Mr. Orlando J. G. B. Bridgeman-Simpson of Wentbridge, Pontefract, by whom, together with a son, he is survived.

CAPTAIN C. C. KEATES, R.A.M.C.

Captain Courtnay Cooper Keates, late R.A.M.C., died on February 7th, aged 32. He was the eldest son of the late Dr. Dudley Keates of East Dulwich Road, and was educated at St. Mary's Hospital, taking the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1908. After acting as assistant house-surgeon and house-surgeon at the Royal Hospital, Portsmouth, he became senior assistant medical officer of St. James's Infirmary, Wandsworth Common. He took a temporary commission as lieutenant in the R.A.M.C. on October 5th, 1914, and was promoted to captain on completion of a year's service.

DR. I. A. TATE.

Dr. Isobel Addey Tate, who died at the Military Hospital, Malta, on January 28th, was the daughter of the late Mr. John Tate of Portadown and Mrs. Tate of Belfast. She received her medical education at Queen's College, Belfast, and graduated as M.B., B.Ch., B.A.O., R.U.I., in 1899, and as M.D. three years later, taking the D.P.H.Vict. in 1904. She had filled the post of medical inspector of school children for Shropshire and also to the Lancashire Education Committee. At the beginning of the war Dr. Tate volunteered for work in Serbia, where she rendered valuable service, and was afterwards engaged at the Graylingwell War Hospital. She subsequently volunteered for service in Malta, where she expired after a short illness.

Wounded.

Captain J. M. Young, R.A.M.C.(T.F.).

Lost at Sea.

DR. W. F. ALGES.

The Anchor liner *California*, 8,669 tons, was torpedoed and sunk by a German submarine on the morning of February 7th on the voyage from New York to Glasgow. Out of about 205 on board, passengers and crew, 43 lives appear to have been lost. Among the missing was the ship's surgeon, Dr. W. F. Alges.

DEATHS OF SONS OF MEDICAL MEN.

Donahoo, Malcolmson Gardiner, Captain King's Own Yorkshire Light Infantry, of Hebbs, Tandridge, Surrey, only son of the late Dr. Thomas Malcolmson Donahoo, was killed on January 31st. He got his commission as second lieutenant on February 27th, 1915. He had recently received the Military Cross.

Dudley, Bernard John Charlton, Captain Dorsetshire Regiment, third son of Brigade Surgeon Lieutenant-Colonel W. E. Dudley of Bath, was killed on January 24th. He was educated at Bath College, and got a commission in the Dorset Regiment from Sandhurst in 1909, becoming lieutenant on June 8th, 1913, and captain in October, 1915. Early in 1914 he took service under the Colonial Office, and joined the 1st Nigerian Regiment, with which he served at Kaduna and Sokoto, being in command at the latter station during the campaign in the Cameroons. He came home on leave in May, 1916, and then went to another theatre of war. His brother, Captain Leonard Grey Dudley, 6th Jat Light Infantry, was killed at Festubert on November 24th, 1914.

Graves, Robert James, Lieutenant Royal Irish Rifles, elder son of the late Mr. Ryves W. Graves, F.R.C.S., J.P., of Gloucester, died in the Military Hospital, Cork, on January 28th.

Lord, Arthur, Captain Welsh Regiment, aged 19 years, died on February 12th of wounds received on February 10th. He was the eldest son of Dr. Robert E. Lord, of Colwyn Bay, and was educated at Haileybury College and at the Victoria University, Manchester, where he was a medical student.

McElfatrick, Jack E., Transport Officer, British Red Cross Society, Cheshire Branch, only son of Dr. McElfatrick, died at Stonycroft Grange, Alderley Edge, on February 1st.

Wilson, John Thomson, Second Lieutenant Seaforth Highlanders, elder son of Dr. T. Lindsay Wilson of Bonhill, Dumbartonshire, was killed in action on January 28th.

MEDICAL STUDENTS.

Harris, A. J., Second Lieutenant 3rd Battalion (King's Own) Royal Lancaster Regiment, who has been killed, entered the London Hospital as a medical student in October, 1914, and was very popular with both tutors and fellow students. He was a member of the O.T.C. and obtained his commission in December, 1915, and a little later joined his battalion at Plymouth.

Jackson, H. S., Lieutenant 8th Battalion King's Own Yorkshire Light Infantry, aged 20, the son of the Rev. Sydney Jackson, of Mitcham, was killed in an attack across "No Man's Land" on July 1st, 1916. He entered the London Hospital as a medical student in October, 1913. Before joining as a combatant he had served for some months as a dresser with the Anglo-Belgian Hospital, and later with the Anglo-American Hospital at Wimereux.

Odam, C. W., Second Lieutenant 1/6th London Regiment, the younger son of Mr. C. Odam, of Mount Boone, Dartmouth, was killed in the battle of the Somme on September 15th, 1916, "whilst very gallantly leading his men." He was born in July, 1897, and after receiving his education at Taunton School entered as a medical student at the London Hospital in October, 1914. He was gazetted in January, 1916, and went to France in the following May.

Satchwell, Ralph William, Second Lieutenant Royal Garrison Artillery, third son of Mr. James Hubert Satchwell, J.P., Mount Mary, Cleggs, co. Galway, was killed in action on January 31st, aged 20. He was a second year medical student in the School of Physic, Trinity College, Dublin, and volunteered for active service in December, 1915, his commission being dated December 17th, 1915. He was home on leave from the front in January last, and was killed a few days after his return.

HONOURS.

THE following medical officers were included in the list of awards in recognition of gallantry in the field and devotion to duty published in a special supplement to the *London Gazette* on February 13th:

To be Companions of the Distinguished Service Order.

Major John Edward Briscoe, South African M.C.

For conspicuous gallantry and devotion to duty. Although himself wounded he continued to tend wounded men under very heavy fire. He set a splendid example of courage and coolness throughout.

Bar to Military Cross.

Temporary Captain William Kenneth Mackenzie, M.C., M.B., R.A.M.C.

For conspicuous gallantry and devotion to duty. He displayed great courage and determination in conducting a hazardous and very difficult enterprise for the rescue of wounded from dug-outs in the newly captured enemy trenches. He set a splendid example throughout.

Military Cross.

Temporary Lieutenant James Lang Cochrane, M.B., R.A.M.C., attached Gloucester Regiment.

For conspicuous gallantry and devotion to duty. He displayed great courage and determination in tending the wounded under heavy fire. He has on many previous occasions done fine work.

Captain Arthur George Fisher, M.B., R.A.M.C.(S.R.).

For conspicuous gallantry and devotion to duty. He went forward to the front line under very heavy fire to locate some wounded men, whom he later succeeded in rescuing. He has previously done fine work.

Captain Kenneth Alexander Gilchrist, South African Medical Corps.

For conspicuous gallantry and devotion to duty. He displayed great courage and determination in tending the wounded under very heavy fire. He set a fine example to those about him.

Captain John Valentine Macdonald, M.B., I.M.S., attached I.A.

For conspicuous gallantry and devotion to duty. He displayed great courage and determination in attending to the wounded under very heavy fire. He has previously done fine work.

Temporary Captain Arthur John Rushton O'Brien, M.B., A. Med. Service, attached Gold Coast Regiment.

For conspicuous gallantry and devotion to duty. He repeatedly dressed and tended wounded men under very heavy fire. He set a splendid example of courage and coolness throughout.

Temporary Captain James Edmund Rutherfurd, M.B., R.A.M.C., attached Royal Irish Regiment.

For conspicuous gallantry and devotion to duty. He displayed great courage and determination in dressing the wounded under very heavy fire. He has on many previous occasions done fine work.

Temporary Lieutenant John Black Stevenson, M.B., R.A.M.C., attached Liverpool Regiment.

For conspicuous gallantry and devotion to duty On four separate occasions he personally conducted stretcher-bearers through very heavy fire to succour wounded men. Later, although himself wounded, he continued to carry on his work.

Temporary Captain Roger Llewellyn Williams, R.A.M.C. attached South Staffordshire Regiment.

For conspicuous courage and devotion to duty. He displayed marked courage and determination in tending the wounded under very heavy fire. He has on many previous occasions done fine work.

The Rev. Stephen A. L. Thornton, Naval Chaplain's Department, attached Royal Dublin Fusiliers, has received the D.S.O., and the Rev. W. H. Fawkes, temporary Chaplain to the Forces, the Military Cross, in recognition of devotion to duty and assistance rendered to the wounded.

The Distinguished Conduct Medal and the Meritorious Service Medal have also been awarded to a number of warrant officers, non-commissioned officers, and men of the R.A.M.C. and the colonial medical services for gallantry and devotion to duty in the field and in recognition of valuable services rendered with the armies in the field during the present war.

MENTIONED IN DISPATCHES.

A special supplement to the *London Gazette* issued on February 8th contains a dispatch from General Smuts, Commander-in-Chief, East African Force, bringing to notice the names of those recommended for meritorious service in the field. The following is a list of the medical officers mentioned:

Royal Navy.—Temporary Surgeon A. F. R. Woollaston, M.A., M.B., R.N.

Staff Head Quarters, etc.—Lieutenant-Colonels H. W. Vaughan-Williams and J. H. Whitehead, and Major G. D. Maynard, South African Medical Corps.

Royal Army Medical Corps.—Captain (temporary Major) J. A. Manifold, M.B. Temporary Captain E. A. Gates, M.D.

South African Medical Corps.—Lieutenant-Colonels W. V. Field and T. Smyth. Majors J. E. Briscoe, J. W. de Vos, H. S. Flook, R. L. Girdwood, M.B., R. M. Truter. Temporary Major J. Hunter. Captain (temporary Major) H. J. Orford. Captains A. Groenewald, M.C., M.B. (deceased), M. Heyns, M.B., N. J. Hofmeyr, M.B. Temporary Captain K. A. Gilchrist, M.B.

Indian Medical Service.—Major (temporary Lieutenant-Colonel) F. W. Sumner, M.B., F.R.C.S. Majors A. Cameron, E. T. Harris, M.B., W. S. McGillivray, M.B. Captains O. A. R. Berkeley-Hill, M.B., A. E. Grisewood, M.B., J. V. MacDonald, M.B.

East African Medical Service.—Captain (temporary Major) A. D. J. B. Williams. Captains A. A. H. Lawrence and J. C. Watt.

Uganda Medical Service.—Lieutenant-Colonel A. D. P. Hodges, C.M.G. Temporary Major H. B. Owen.

West African Medical Service.—Temporary Captain A. J. R. O'Brien.

The list also contains the names of a number of non-commissioned officers and men of the R.A.M.C., the South African Medical Corps, Indian Medical Service, the Uganda Medical Service, two members each of the Queen Alexandra's Imperial Military Nursing Service and the South African Military Nursing Service, and four members of the East African Nursing Service.

IT is estimated that 248 persons suffered from mushroom poisoning in Germany during 1915. Of these, 80, of whom 52 were children, died. These figures do not include doubtful cases of mushroom poisoning, or cases in which the symptoms were due to deterioration of non-poisonous mushrooms. In most of the fatal cases the poisonous mushroom eaten was *Amanita phalloides*. The next most common offender was *Lactaria torminosa*. The frequency with which mushroom poisoning occurred in 1915 is attributed to the abundance of mushrooms in that year, and to the shortage of other foods.

Ireland.

MR. RICHARD F. TOBIN, F.R.C.S.I., has been appointed Inspector for Ireland under the Cruelty to Animals Act, 1876, in succession to Dr. Joseph O'Carroll, resigned.

CIVIL SURGEONS IN ULSTER.

At recent meetings of the Ulster Branch and Portadown and West Down Division of the British Medical Association the following resolution was passed unanimously:

That we consider the treatment by the War Office of the civil surgeons in Ulster employed in military hospitals, who were displaced after the heavy work of the previous years without any sufficient reason, to be unjustifiable, and we request the matter to be reconsidered.

SUCCESS OF THE OPEN-AIR TREATMENT IN DUBLIN HOSPITALS.

The fifty-eighth annual report of the Board of Superintendence of the Dublin Hospitals, issued last week, shows that all the hospitals fulfil in an economical and thorough manner the object for which they were instituted. Touching the open-air treatment of tuberculous patients at Steevens's Hospital, the Board of Superintendence declare that it is economical, yields excellent results, and conveys a lesson of great value to the public. The report states:

For a long time it was believed that the climate of Ireland was unsuited to such a method of treatment, and that, in large cities and towns at all events, no good could be expected to result from putting patients to live in the open air. Public prejudice was strongly opposed to such a measure, and those who advocated it were warned that hospital patients would never submit to it. Experience has falsified these predictions, and it has been found that such patients gladly avail themselves of the opportunity of adopting this treatment. The results that have been obtained have more than justified the hopes of those who recommended it.

The report proceeds to say that the patients recommended to the outside wards are generally those suffering from chronic tuberculous disease of the bones or lungs, but sometimes patients suffering from other chronic diseases are treated outside. So far, patients with acute diseases have not been treated in the outside wards, as, owing to the limited accommodation, it has been considered more advisable to devote these beds to the service of patients suffering from chronic illness. An effort is always made to start the patient's period of residence outside during fine weather, as under such conditions he becomes more quickly acclimatized and has less fear of the exposure. The results have been, on the whole, very satisfactory. The patients eat and sleep better than they do indoors. Accurate statistics for comparison are not available, and are difficult to procure, but there is no doubt as to the benefit from the point of view of therapeutics, as there is none from the point of view of the comfort of the patient. As an example of the results obtained, we may quote the case of a patient who spent many months in the open-air ward undergoing treatment for spinal caries. He is now serving in the artillery.

IRISH VOLUNTARY AID DETACHMENT CHALLENGE CUP.

The competition for the Irish V.A.D. Challenge Cup, the gift of Lady Arnott, commenced on February 9th, at the Mansion House, Dublin. The cup and prizes will be presented by Surgeon-General Sir Richard Ford, D.D.M.S. Irish Command. The competition has aroused interest, for nursing divisions of the St. John Ambulance Brigade and V.A.D.'s of the British Red Cross Society are contending for the honour. Their rivalry, however, is of the most friendly character; for the two organizations are working together during the war in the most splendid of causes, and the rivalry is the outcome of the ardent desire on the part of members of both bodies to make themselves as proficient as possible. The spheres in which their ability is being tested are first aid, home nursing, drill, smartness and correctness of uniform, and stretcher bearing. It was a pleasure to witness the care shown in the work, which was watched by many of the public with interest, and showed a high standard of knowledge and skill.

Scotland.

THE conference promoted by the National Association for the Prevention of Infant Mortality and for the Welfare of Infancy will be held in Glasgow on March 13th and 14th. It will be attended by delegates from twenty-six burghs and six county authorities in Scotland; from seven boroughs and two county authorities in England; from one borough in Ireland; and from twenty-four associations otherwise interested in the welfare of infancy and early childhood. It will be opened by the Lord Provost at 11 a.m. on March 13th. There will be a forenoon and an afternoon session on each day, and a public meeting on Tuesday evening.

THE HEALTH OF GLASGOW.

Dr. A. K. Chalmers, M.O.H., reports that the death-rate of Glasgow for 1916 was 15.4 per 1,000. It was the lowest hitherto recorded, and compared with 18.9 for 1915. An estimate of population based on a return of inhabited houses showed an increase of 1.9 per cent., as compared with 1.7 for the preceding year, and also that there was a continuance of the reflux of population to the central districts of the city. A sample test of the movement of population in representative areas since the census was made in thirty-two areas in thirty separate wards. The result was to show that the occupied houses had increased from 12,207 to 13,280, while the population inhabiting them had fallen from 57,297 to 55,288. Of the members of the families occupying these areas 6.8 per cent. were on service, and 6.3 per cent. were lodgers. The general result was that instead of an average of 4.7 persons per house in these areas at the census, the average was now 4.2, and was only raised to 4.45 if the men on service were added. These figures suggest that the estimate of total population of the city in the middle of 1916, which was 1,095,171, might be 50,000 in excess. The changes, Dr. Chalmers added, were more profound in the areas examined; males were fewer by 2,477, females by 468. All but 181 of the reduction in males occurred at the ages 10–45, while the increase in females had chiefly been at ages under 10, and again between 15–25. At most ages over this a reduction had occurred. Taking both sexes together, the reduction affected all ages over 10 years.

GLASGOW ROYAL INFIRMARY.

The report presented to the annual meeting of the contributors to the Glasgow Royal Infirmary on February 12th stated that 175 beds had been placed at the disposal of the naval and military authorities, and that 688 soldiers and sailors had been treated, an increase of 134 over the previous year. Practically all the members of the medical and surgical staff had been doing military duty during the year, but in spite of the reduction in staff the work of the infirmary had been carried on in all its departments. The daily average number of patients resident was 767, an increase of 26 over the previous year. The total number of admissions was 10,789, an increase of 84, and the rate of mortality had been 9.7 per cent., as against 9.9. The number of first attendances at the dispensary was 42,428, and the general tota 137,864. The average cost of each fully occupied bed was £89 6s. 9½d., against £80 13s. 0½d. in 1915. The average residence of the in-patients was 12.7. In the ophthalmic wards the number of patients treated was 825, a decrease of 74, and the number of out-patients was 12,859, a decrease of 453. At the Schaw Convalescent Home the admissions were 1,167 as compared with 1,289. Under the will of Miss M. S. Schaw, £40,000 had been provided as an additional endowment for the home, and £60,000 for the benefit of general funds of the infirmary; of this latter amount the use of £40,000 is restricted to income. By extraordinary receipts the committee had been able to pay off £16,658, partly to replace sums withdrawn in the two previous years (£15,429 in 1915, and £2,651 in 1914). Sir Donald MacAlister, in moving the appointment of the managers, referred to the fact that ten years ago that day he had been appointed Principal of the University of Glasgow; during that period he had learnt to know the value of the services the Royal Infirmary was rendering to the relief of suffering among the poor, and to the advancement of medical knowledge for the benefit of the poor and rich alike.

England and Wales.

THE LORD MAYOR, who presided on February 8th at the eighty first annual meeting of St. Mark's Hospital, City Road, London, said that 688 in-patients and 1,800 new out-patients had been treated during the year. Owing to the increase in cost of everything connected with hospital administration the accounts showed an adverse balance of £600. The hospital was greatly in need of a convalescent home.

BORIC ACID IN CREAM.

Numerous representations were made to the Local Government Board for England and Wales before the war on the subject of boric acid in cream. Some urged that the use of all preservatives should be wholly prohibited, while others maintained that it would be impracticable to carry on the present trade in jugged cream unless some small amount of preservative was added. The department was asked to lay down a maximum limit, and had decided to appoint a small committee, but owing to the war this intention was not fulfilled. The President has now issued an Order directing that no more than 0.4 per cent. of boric acid shall be added to cream, and that cream to which boric acid has been added shall be sold as preserved cream, and prescribing forms of labels to be affixed to the receptacle containing such cream, stating that it contains boric acid and is unsuitable for infants and invalids. The Board desires it to be understood that in temporarily forbidding a greater addition per cent. of boric acid than 0.4 it must not be regarded as deciding the question proposed for inquiry as to whether this amount is or is not injurious to the consumer. The inquiry, when it takes place, may show that the limit should be lower, and dealers are asked to reduce it to the smallest possible amount, or to dispense with it entirely, so that they may find less difficulty in complying with any further restrictions which may be made on the recommendations of the committee when appointed.

MILITARY ORTHOPAEDICS IN WALES.

The Welsh Metropolitan War Hospital at Whitchurch, Cardiff, was visited on February 10th by King Manoel on behalf of the British Red Cross Society. He was received by the officer commanding the hospital, Lieutenant-Colonel Edwin Goodall, and was accompanied by Colonel Robert Jones, C.B., Inspector of Military Orthopaedics, and Lieutenant-Colonel Lynn Thomas, C.B., C.M.G., consulting surgeon to the Western Command. Three hundred beds have been set apart in the hospital for military orthopaedic cases and fifty beds for soldiers who have lost their limbs, who will afterwards be transferred to the Prince of Wales's Hospital, Cardiff, to be provided with artificial limbs. King Manoel made various suggestions with regard to the manual curative workshops, a subject on the organization of which he has specialized.

Canada.

HOSPITAL ACCOMMODATION IN THE PRAIRIES.

GREAT interest is being manifested throughout the west of Canada in the establishment of municipal hospitals in rural districts. The heavy mortality, particularly in childbirth, in sparsely settled districts has shown the need for improvment; and now, when the future of Canada depends so much upon immigration after the war, it becomes a question of the greatest importance to remove every obstacle in the way of inducing people to settle in outlying districts. The matter was taken up by the Saskatchewan Government about a year ago, when an Act was passed which provides for the establishment of hospitals to serve four municipalities. It is intended that such hospitals shall be established throughout the province in districts which are not already provided with sufficient hospital accommodation, and that both accommodation and treatment shall be free to all residents of the district. Provision is made for levying a 2 mill tax if necessary for the support of these hospitals, but it is anticipated that less than this will be sufficient to meet all maintenance expenses. By-laws have been prepared by a number of

municipalities to permit of the establishment of such institutions, and it is probable that about twenty-five such hospitals will be founded before long. Great credit is due to the Honourable George Langley, Minister of Municipal Affairs, for the interest he has taken in this matter.

Keen interest in the movement is manifested also in Manitoba, and the Government has been requested to take the necessary steps to enable municipalities to co-operate for the establishment of rural hospitals on the lines of the Saskatchewan arrangement. In the province of Alberta a similar movement was initiated in May, 1916, by the Trades and Labour Council and the Ministerial Association of Canada. A committee appointed by these bodies became the Free Public Hospitals League, which is now conducting a campaign in favour of the establishment of free hospitals throughout the province. The views of the profession in Alberta upon this subject were set forth in the following resolution, which was passed at the annual meeting of the Alberta Medical Association:

1. That we, the Alberta Medical Association, approve of the efforts being made for the extension of hospital accommodation in this province, and will be glad to co-operate in any efforts to secure and improve hospital accommodation in rural districts.
2. The need of hospital accommodation is at present most acute in the country districts, and we urge the establishment of cottage hospitals throughout the rural municipalities, the management of such hospitals to be left in the hands of a committee and to be made as largely self-supporting as possible.
3. We believe that the hospital accommodation of the cities of Alberta is at present adequate for the needs of the present population of the cities. We also believe that the present system of management and rules of admission and conduct of patients is the best suited to give the best service to the whole community. We believe that no one in the cities suffers for want of such treatment because of its cost. It is our experience that there is no difficulty in obtaining any form of hospital treatment free of charge if the circumstances warrant it.
4. This Association wishes to protest against certain misrepresentations regarding the management and service of the hospitals of this province. We are in a position to know that the present hospitals are rendering an efficient and valuable service to all classes of people and merit the hearty support of the community they serve.

Asylum Fire in Quebec.

A disastrous fire occurred at St. Ferdinand de Halifax, in the Province of Quebec, on Saturday, December 30th, 1916, when the asylum, convent, and church buildings were completely destroyed. The temperature was below zero at the time, and this added materially to the difficulties of the situation. The asylum was conducted by the Sisters of Charity, and it was only through their presence of mind and heroism that most of the inmates were saved. Unfortunately forty-two imbeciles perished owing to the difficulty of making them understand the danger and obey orders given. Some of the patients were in a distant portion of the building, to which access very soon became impossible; but even from this part of the asylum fourteen helpless imbeciles were carried into safety by the Sisters, one of whom lost her life in attempting to make further rescues.

Medical Inspection of Schools.

A difference of opinion has been apparent for some time in Toronto as to whether the medical inspection of school children should be directed by the Department of Education or the Board of Health. In the past it has been under the direction of the former body, but public opinion has been growing steadily more and more in favour of its transference to the Board of Health. The present system has been in force since 1908, when the Board of Education was asked by a deputation of medical men to undertake the medical inspection of school children. Since then the work of the Department of Public Health has greatly increased, and dual control has resulted, the nurses employed by the Board of Health and the school nurses frequently visiting the same houses. It is pointed out by the health authorities that medical inspection of children under school age is as important as inspection of those attending school, and that it would seem more rational to place all work of that nature under the direction of the medical officer of health. The question was taken before the provincial government a year ago, but no decision was reached. A conference took place last November, at which a compromise was suggested, which was to be tried for six months. This, however, was not done, and the matter was put to the public vote on New Year's Day, with the result that an overwhelming majority (20,000 against 6,000) voted in favour of the transference of medical inspection to the Board of Health. The matter will therefore come up again for consideration at the next session of the Ontario Parliament.

Correspondence.

THE PROPHYLAXIS OF VENEREAL DISEASES.

SIR,—As you have permitted distinguished specialists and a layman to discuss the prevention of syphilis in your columns, perhaps you will allow a medical woman, who is also the editor of a study on the making of the prostitute, generously reviewed in a recent issue, to comment on certain aspects of the question.

It is impossible not to feel much sympathy for those who wish to separate the prevention of venereal disease from "morality." Partly, because to so many excellent persons "morality" means a revolting code which condones any iniquity within the four corners of matrimony, and lumps together as "sinful" all expressions of love between other people, whatever the circumstances. And further, because we do in practice find gross "immorality" (as the premarital unchastity of engaged couples in rural districts or the free manners of factory girls in small provincial towns) without any accompanying trace of syphilis. But it is perfectly clear that wherever "immorality" takes the form of prostitution venereal disease will be rife. Flexner's *Prostitution in Europe*, or any well-known work on the subject will substantiate this point, and, indeed, I do not think it is ever disputed. Syphilis and gonorrhoea are the "industrial diseases" of prostitution, and what sane medical man would discuss the prevention of an industrial disease and ignore the industry that spreads it? Nor do I know of anything in the relation of the doctor to the community (despite the amazing arguments of Mr. Hugh Elliot) which deprives him of the right he possesses as a citizen and a Christian to regard prostitution as an abominable institution which ought to be abolished, or at least reduced to a minimum. This has been the considered verdict of the community in which we live, and may quite properly be allowed to influence the attitude of any practitioner who is asked for prophylactic advice by a patient who proposes to visit a prostitute or to become one. It would be rash in the extreme to speak dogmatically on what is perhaps the most difficult question in medical ethics; I only plead for the right of the doctor to consider all the circumstances, and act as his conscience directs. Mr. Elliot's dicta would compel him equally to give the benefit of his skill to the ladies who come for information how to procure abortion, or would oblige a solicitor to give hints in dodging the law to an aspiring criminal.

A similar mixture of medical and "moral" reasons lies at the root of the objections many of us feel to attempts at preventing syphilis by "regulating" prostitution. This point is of the gravest urgency and merits the most careful consideration of the profession. I have been told by two important officials in the last few days that a great Government department is working vigorously by skilfully disguised methods to introduce "tolerated houses" with licensed and inspected women for the delectation of the troops. We object to these proposals—first, because we hold that it would be hygienically ineffective, that no system of examination can render public women actually "safe," and further, that by giving a false sense of security to men, it increases the number of "customers" and therefore augments the spread of disease rather than diminishes it. We plead that the experience of nearly every capital in Europe where the experiment has been tried is on our side. The onus of proof that it would succeed here must lie on those who wish to introduce a system abundantly discredited on medical grounds alone. As practical persons we invite the "Regulationists" to tell us where they are going to find a police force large enough to be effective and incorruptible enough to resist the inevitable bribes in money and kind—a little detail which has baffled every known country heretofore. How could the clandestine

prostitute (admitted to be more numerous than the full-time variety) be dealt with except by an intolerable system of spying and interference which would involve gross indignities to respectable women? The dilemma of dealing with the young prostitute is the gravest of all. Seventeen is the age when the majority of women take to the streets—many of them have been leading an irregular life even earlier. Are children of this age to be formally bound to a life of shame and danger? Even the conscience of the Hun refuses to allow the registration of girls below 21, and if not registered they cannot be examined or confined in brothels.

Until these difficulties have been effectively met I suggest that those who advise reliance on education, efficient treatment, restriction of alcohol, more women police, sharper sentences on *both men and women* guilty of solicitation, and suppression of quacks have the argument on their side. The taunt that they desire to preserve syphilis in the interests of "morality" is best met as Mrs. Josephine Butler met it—by silence.—I am, etc.,

February 11th. THE EDITOR OF "DOWNWARD PATHS."

SIR,—So strongly do I agree with the admirable letter by Sir H. B. Donkin (January 27th, p. 135) that I write to urge those in charge of the preventive treatment of disease throughout the country to express their adherence to the views therein stated.

A few years before the war I happened to be in Alexandria, and had the pleasure of meeting the medical officer in charge of the Government hospital. He informed me of the enlightened policy adopted by the medical officers in charge of certain warships stationed there at the time, a policy which had almost abolished venereal disease in those units. Mercurial ointment and bougies with instructions were given. I cannot remember if it was only on application or to each man on shore leave. Those who know Alexandria and the temptations for Jack ashore can imagine what a prodigious amount of suffering and expense was avoided by these simple methods.

Is it too much to expect of the Local Government Board to have sufficient courage to instruct all sanitary authorities that their medical officers should keep a stock of medicaments for supply to the public free on application? Such a step would go far in preventing the contagion from spreading.

All medical men will agree that Utopian schemes for abolishing irregular sexual intercourse are impracticable; surely it is in accordance with common sense to recognize this, and adopt the best methods to stop the spread of infection.—I am, etc.,

G. A. LEON,

Torquay, Jan. 29th. Acting Medical Officer of Health.

SALVARSAN TREATMENT OF SYPHILIS.

SIR,—I have read with much interest the article by Major Lloyd Jones and Captain A. J. Gibson on the salvarsan treatment of syphilis in the BRITISH MEDICAL JOURNAL of February 3rd, p. 152.

What surprises me is the very large number of cases which exhibit reactions after injection.

It will be noticed that the authors divide the reactions under three headings:

1. *Mild.*—Headache, diarrhoea, vomiting, abdominal pains. In about 50 per cent. of these cases the cause is put down to neurosis.
2. *Severe.*—Cardiac, respiratory, central, severe diarrhoea, rash, rigors, 9.9 per cent. Some of the causes mentioned under this heading are injection of air, small clots in the needle, employment of water not freshly distilled (these causes seem to me to be due to faulty technique).
3. *Local.*—Bruising, haematoma, lymphangitis, abscess, thrombosis.

In the 1,320 injections only 37 per cent. had no reaction. I, and doubtless many others, would like to know: (1) What preparation of salvarsan was used for injection? (2) Was the preparation used in a concentrated or diluted form? (3) Were the subjects treated as out-patients or kept in bed for a time?

On looking over my notes of about 200 injections I find that I have never had a case coming under class (1) or (2). I have had one only coming under class (3). This occurred in one of my very early cases in which I injected some of the fluid outside the vein, setting up cellulitis. This is the only case in which I ever had a moment's anxiety. Thus, instead of having reactions of any sort occurring in 63 per cent., I have only had 0.5 per cent. Of course, my number of injections is comparatively small, and I may have been very fortunate, but the difference seems very marked.

For my own part, I have nearly always treated my cases as out-patients, and have not hesitated to let them go from London directly afterwards to their homes—some as far as the seaside—without inconvenience or harm occurring.

Salvarsan is now about to be used extensively all over the country under the new regulations issued by the Local Government Board, but one would rightly hesitate to employ a preparation which caused such unfavourable reactions as described by Major Lloyd Jones and Captain A. J. Gibson.—I am, etc.,

London, E.C., Feb. 10th. JOHN ADAMS.

THE FUTURE OF THE MEDICAL PROFESSION.

SIR,—The articles appearing from day to day by the medical correspondent of the *Times* in that newspaper tend to give the impression that the methods of the British Medical Association do not meet with his approval. On the other hand, the British Medical Association does not appear to approve at all of the sentiments of the *Times* medical correspondent.

To the ordinary medical observer who reads his *Times* daily and his BRITISH MEDICAL JOURNAL weekly, the *via media* between these two seems to be the path of wisdom. Almost as surely as night follows day, some system of state medical service will come into being in the reorganizations that must and will undoubtedly take place with the close of this great war. The thin end of the wedge has been inserted, and while the wedge has had several blows since then driving it further home, the sledge-hammer blow that will drive it right home will come with the ending of the war. It is useless to meet this with a "we cannot" or indeed "we will not." It cannot be prevented; there is less chance than there was with the Insurance Acts, and if the British Medical Association would be wise in time, and so retain the confidence of its members, whose views in many cases are being radically altered by the war, it would not coldly reject the idea of a state medical service, but would, first from the side of the medical man, and secondly from that of the public, thoroughly investigate the possibilities and the effect on medical men, and consider the best way in which a state medical service could be made effective.

For what the British Medical Association gained for us over the Insurance Acts we are indeed grateful; it accomplished a great work, but alas! for the cropper the profession came at the final ditch, which did not tend to improve the repute of the medical fraternity.

The cause was the want of a strong lead from head quarters. Those negotiating knew and fully appreciated the exact situation as to how far the Association could go with safety in getting the best terms out of the Government, but did not grasp the want of trust between medical men locally. The policy of the British Medical Association seems to be to carry out the wishes of the majority by referring points of all sorts back to Divisions for decisions, which Divisions record their opinions, often at meetings at which not 20 per cent. of the members attend, and at which members do not grasp, indeed cannot grasp, the niceties of any particular position, and thus constantly come, not so much to wrong decisions, as to injudicious ones. I would strongly submit, therefore, that the proper policy is for the Representatives of Divisions to decide together the exact policy to be pursued without reference to the Divisions. The meetings of Representatives should be fully reported in the BRITISH MEDICAL JOURNAL. If any Representative acts in an unsatisfactory manner in the view of his Division he could be changed at the end of the year.

Representatives should be men chosen for their acquaintance with the particular conditions existing in the locality they represent. Thus thoroughly representative Representatives for each Division would be constantly meeting together to discuss all matters connected with the medical profession, when necessary subcommittees for inquiry into special subjects would be formed to report to the whole Representative Meeting, which would take action for the

profession. Once a year only the Representative would account to his Division, and be re-elected or not. The Division, of course, could approach him by letter or deputation any time if they wished during his year of office to put their views before him on current topics. To put it shortly, the profession wants a lead; given a strong lead, affairs will progress. With such a body at the present time, without any reference to its Divisions, it would inquire fully into possible systems of state medical service, and would then be able to instruct the members of the Divisions, at local annual meetings, at which the Representative gives an account of his year's work, as to the wisest course to pursue in future, and the Representatives would hear from the members of their Divisions the various local views.

The views of the medical correspondent of the *Times*, with its hordes of specialists everywhere, are, I think, but ill developed at present. If the Government should come to the medical profession with a verdict that a state medical service must be, the latter would then be in a position to get the best terms without any loss of repute. The sympathy of the medical correspondent of the *Times* seems to be with the newly qualified man who, with the close of the war, will have served two or three years in the Royal Army Medical Corps. I suggest these men have very little to complain of, since as soon as they are qualified—mostly unmarried and with no ties—they step into posts bringing them a very ample income, of which they can save four fifths, and when the war is over they will be in a position to buy partnerships or practices. Whereas the unhappy doctor who, married and with a family, has left his practice for the war, receives the same pay, and then finds, as is now well known, that the receipts of his practice do not pay the actual outgoings of that practice, and with life insurances, that like a wise man he had invested in while making a good income to make a still further hole in his army pay, he has a struggle to make two ends meet. In addition he is further depressed by the thought that his heirs will lose most of his capital invested in the practice should he succumb. If he survives he has the prospect of a very diminished income for a considerable period of time. These are the men in our profession who are now being badly hit, and on the top of all comes the idea of the state medical service (with the vision of the unhappy man who is to be the midwifery specialist having perpetual all night sittings) which will probably hit him still further, especially in capital value.

Though I am more or less one of the latter class, I am by no means absolutely opposed to a state medical service, but I do think it is up to the British Medical Association to reorganize its methods so that we have no repetition of the Insurance Acts fiasco. The policy of the British Medical Association is surely a little too like that of the "wait and see" type for these strenuous days.—I am, etc.,

Worthing, Feb. 5th. CECIL H. W. PAGE.

MOBILIZATION OF THE PROFESSION.

SIR,—As one of those unfortunate practitioners who have been passed only for home service, perhaps I may be permitted to reply to Dr. Clarke's letter in your issue of February 3rd, in which he refers in such scathing terms to those who, like myself, have been considered as unfit to serve in His Majesty's Forces, and who have been obliged, therefore, to work twelve hours a day and pile up riches for themselves.

I should like Dr Clarke to consider my case. Before war broke out I was working as hard as my health permitted, and was making a decent income fairly comfortably. Since war broke out I have had to work even longer hours, endeavouring to cope with the increase of work entailed by the loss of colleagues. As a result my health broke down last year, and I was on the sick list for four months. I did not pile up much riches last year, and even if I had not broken down my income would have been less than normal because so much of the work done was at half rates, and one's own fully paid work had to suffer for the sake of one's colleagues.

Now another practitioner is wanted from this area. Probably I shall be passed over and a man fit for general service will be taken. I shall stay at home, doing even more underpaid work, while he is working for "less than four hours a day in a closed area" (I use Dr. Clarke's figures). And around me I see men—presumably passed as fit for general service—who are working very short hours in the army.

Would it not be better if such as I were taken for these jobs at home, where we could live in our own homes, certain of our usual comforts, without which we probably would be quickly on the shelf? I know of one or two "billets" in my immediate neighbourhood that I could fill well and still have some spare time for my private patients; yet, on making application, I am told that I am ineligible. Still, I manage to do perhaps three times as much work as those who fill these berths—and they are fit.

I would assure Dr. Clarke that I am quite ready to "sacrifice something for my country and do hospital work at home or abroad," if I were given the chance. If the correspondence in the BRITISH MEDICAL JOURNAL recently is to be believed, one would have a comparative holiday—if one were given the chance!—I am, etc.,

February 8th. SCARIFIED.

PANEL DOCTORS AND THE WAR LOAN.

SIR,—On February 6th I wrote to the Clerk to the Glamorgan Insurance Committee, stating that "I considered it my bounden duty to put every penny I could scrape together into the War Loan, and asking if it were not possible for the Glamorgan Committee to pay to me within the next seven days the money which was owing to me by that Committee—balance for the years 1913, 1914, 1915, and 1916—or, if the Committee preferred it, I was quite willing to take it in War Loan scrip." The answer I received was this:

> I have to acknowledge receipt of your letter of the 7th inst. with reference to payments, and beg to state that it is probable that arrangements will shortly be made for paying whatever balance may be found to be due to all doctors and systems in respect of 1913, 1914, and 1915. I regret, however, I am not able to give the date by which payments will be made.

How magnanimous! But how pitiful, too, that we as a profession should be so entirely under the heel of a body of laymen like the Insurance Committee, to say nothing of the injustice. We cannot enforce payment of that which is so long overdue, and which we have toiled long and hard for, but must wait still further until it shall please the Committee to move; then we have no check and no redress, but must take that which it pleases the Committee to give, just as at the present time I am paid, not according to the number on my panel, but "a share of a pool representing the total funds available for medical benefit."—I am, etc.,

A PANEL DOCTOR IN GLAMORGAN COUNTY.

February 13th.

Universities and Colleges.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

A MEETING of the Senate was held on January 24th.

Recognition of Teachers.—Dr. William Gilliatt (King's College Hospital Medical School) and Miss Elizabeth H. Lepper (London School of Medicine for Women) were recognized as teachers in midwifery and pathology respectively at the institutions indicated.

Semon Lecture.—The Academic Council reported that no appointment to the Semon Lectureship would be made for 1916-17.

Military Age for University Students.—With regard to the new regulation whereby men between the ages of 18 and 19 are to be called to the colours for home duties, the Senate decided to communicate to the War Office and the Board of Education its opinion that in view of the great demand which exists for officers at the present time it would be in the national interest to permit the matriculated students of the University to continue their studies to the age of 18 years and 8 months or, if possible, 19 years, provided that suitable military instruction be made available for them in the London University Contingent of the Officers' Training Corps for a definite number of hours weekly approved by the War Office. The Senate considers that the continuance of university studies under such conditions to the age of 19 is better for those who are to become officers than service as a private for the purposes of home defence.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN Ordinary Council was held on February 8th, when Sir Watson Cheyne, President, was in the chair.

Issue of Diplomas.

Diplomas of Membership were granted to eighty-two candidates found qualified at the recent examinations. Diplomas

in Public Health were granted, in conjunction with the Royal College of Physicians, to six candidates found qualified at the recent examinations.

College Finance.

The Treasurer reported that the Finance Committee had taken steps to apply for £23,900 new 5 per cent. War Loan, of which £2,000 was new money. The Finance Committee was instructed to take steps to raise a loan for additional investments in the War Loan.

Treatment and Prevention of Venereal Diseases.

A letter addressed to the President on January 12th by Lord Rhondda, President of the Local Government Board, was read. It stated that the suggestions made by the Council of the Royal College of Surgeons of England as to the treatment and prevention of venereal diseases would receive his careful and sympathetic consideration.

Bradshaw Lecture.

Sir John Bland-Sutton was appointed to give the next Bradshaw Lecture.

CONJOINT BOARD IN ENGLAND.

THE diplomas of L.R.C.P. and M.R.C.S. have been conferred upon the following eighty-three candidates who were successful at the final examination in medicine, surgery, and midwifery:

Jugal Kishor Adhya, A. Arias, C. W. Armstrong, E. M. Atkinson, H. H. Bailey, K. N. G. Bailey, E. J. Ball, D. J. Batterham, L. G. Blackmore, C. J. L. Blair, H. J. Blampied, C. S. Bluemel, D. C. Bluett, W. H. Braddock, Hilda K. Brade, J. Burke, P. A. Buxton, C. H. Carroll, D. G. Churcher, A. A. Cockayne, C. J. C. Cooke, G. F. Cooke, J. Crétin, Ahmed Tayel Dabbous, A. V. S. Davies, G. V. Davies, Mahmoud Abu Bakr Demerdash, H. A. de Morgan, A. R. Dingley, J. R. K. Fenning, L. P. L. Firman-Edwards, A. A. Fitch, F. C. A. Frith, W. V. Gabe, Aziz Girgis, L. B. Goldschmidt, H. G. Grant, J. R. Harris, G. A. Harrison, T. L. Heath, N. S. Hewitt, G. Hoffmeister, M. C. Joynt, E. A. C. Laugton, F. R. Leblanc, Annie Lloyd, E. R. Longstaff, R. W. Lush, H. D. McIlroy, K. A. I. Mackenzie, K. Masson, M. W. H. Miles, Marie M. A. Moralt, J. B. Mudge, Elizabeth O'Flynn, E. S. Orme, J. A. Panton, M. Pearson, C. J. Penny, V. F. C. J. Philippe, F. Portas, A. A. Prichard, E. D. Roberts, J. P. Ross, K. M. Ross, G. H. Rossdale, Nirendra Mohan Sen-Gupta, M. Shimberg, Raghunath Dadora Shirwalkar, Flora N. Singh, C. R. Smith, N. H. Smith, V. R. Smith, J. G. Stevens, D. Stewart, D. J. Thomas, J. H. Thomas, W. G. Verniquet, H. C. Viehoff, S. A. T. Ware, A. A. Watkinson, E. Williams, A. T. Woolward.

Obituary.

LIEUTENANT-COLONEL R. E. WOOD, F.R.C.S.E., R.A.M.C.(T.F.).

RUSSELL ELLIOT WOOD was the representative in the fifth generation of a family of doctors who had successively practised medicine in Edinburgh, and all of whom attained high eminence in that city, alike professionally and socially. He was a son of the late Dr. Andrew Wood, and was born in Edinburgh in 1856. In his native town he passed his school and college days, the former in the Edinburgh Academy, the latter in the University and Extra-Academical School. He graduated M.B., C.M. in 1877, and for the prescribed times acted as house-surgeon in the Royal Infirmary and resident medical officer in the Sick Children's and Maternity Hospitals. Shortly after his period of work in those institutions the Zulu war broke out; he volunteered for medical work, and was sent out to South Africa, where he saw much of the fighting, and was present at the decisive battle of Ulundi, receiving for his services the Zulu medal and clasp.

Returning to Edinburgh, he obtained the F.R.C.S.Edin., and at once began practice, and became associated with the New Town Dispensary, to the medical officers of which his kinsman, the late Dr. Francis Cadell, was then acting as medical secretary. Soon his practice developed, and he gained for himself the respect and regard of the public and of his medical brethren, so that while quite a young man he found himself in the position which had been worthily held by his forbears for some 200 years.

Shortly after settling in Edinburgh he was appointed surgeon to the Lanarkshire Yeomanry. He devoted himself enthusiastically to this duty, looking forward to his annual week's training on Lanark Moor as he did to his annual holiday. Before retiring, he busied himself in writing and publishing a history of that distinguished regiment.

Whilst avoiding politics, Russell Wood was in his ideas, medical and otherwise, conservative in the true sense of the word. He held fast to the great truths which had stood the test of years, and at the same time shrewdly distinguished between what, in his own times, were real additions to medical knowledge and what would prove ephemeral.

But what endeared him most to his friends and medical brethren was his honest frankness and his clubbableness. He was a delightful and racy companion at golf or curling, and for many years a golf foursome, composed of Wood, Dunsmure, Cadell, and Carmichael, met every Wednesday and played a strenuous round over the old Musselburgh Links. At the dinners of the Medico-Chirurgical and Aesculapian Clubs his presence and conversation always lent brightness and cheerfulness to the gathering, and his songs, often original, were always appreciated. It is pathetic, though not without consolation, to think that, like his father, he died practically in harness. Some three years ago he retired from the surgeoncy of the Lanarkshire Yeomanry, continuing, however, his practice in Edinburgh, but, on the outbreak of the war, he at once offered himself for military duty. His offer was accepted, and it was whilst serving with the troops at Dunbar that his fatal heart seizure occurred. He passed peacefully away, apparently without the slightest pain or struggle, as he was found dead sitting in his chair, and more as if in quiet sleep than that the hand of death was upon him. He will be much missed and mourned by a large circle of friends and patients, and our heartfelt sympathies go out to his sorrowing widow and son and daughter, to whom he was as deeply and lovingly attached as they were to him.

JOHN BARRETT COLLYNS died on January 7th at the ripe age of 96. He was born at Dulverton in January, 1821, and celebrated his last birthday by entertaining a party of friends to luncheon and bridge. He was the oldest student of St. Bartholomew's Hospital on the *Register*; two of his sons and three of his grandsons received their professional education at the same medical school. Mr. J. Barrett Collyns was apprenticed to his father before he entered St. Bartholomew's in 1843. In 1845 he took the diploma of M.R.C.S., and the L.S.A. in the succeeding year. He then joined, at Dulverton, his father, Charles Pauk Collyns, author of *The Chase of the Red Deer*. Possessed of unusually strong physical powers and great surgical skill, he soon acquired a high professional reputation; he on emergencies often operated single-handed without anaesthetics. On one occasion he reduced a dislocation of both hip-joints in a cottage on Exmoor. His long journeys in that district were always done on horseback. He did not retire from practice until 1900. His faculties remained unimpaired, and he often related how he had heard Sir James Paget deliver his first lecture and how Wormald taught anatomy and how Skey operated.

DR. WALTER BAYNE GEIKIE, who died at Toronto on January 12th, at the age of 77, was the founder and dean of Trinity Medical College. He came of a distinguished family. He was a cousin of Sir Archibald Geikie, at one time Director-General of the Geological Survey and President of the Royal Society, and a brother of the Rev. J. Cunningham Geikie, author of the well-known *Life of Christ*. He was born in Edinburgh on May 8th, 1830, the son of Rev. Archibald Geikie, a Congregational minister, who went to Canada in 1843 and settled in Mooretown, in the province of Ontario. Dr. Geikie obtained his medical degree from Victoria University, Toronto, and also graduated from Jefferson College, Philadelphia. He received his licence to practise from the Medical Board of Upper Canada in 1851, and for the following five years practised at Bond Head. In 1856 he was appointed to the staff of the medical faculty of Victoria University, Toronto. In 1860 he was obliged to give up most of his academic work owing to ill health and went into private practice at Aurora, Ontario, though he continued to lecture at Victoria. In 1869 he was appointed to the chair of medicine and clinical medicine at Victoria University. In the following year, however, he resigned, and in 1871 founded Trinity Medical School, then a department of Trinity University, Toronto. Seven years later, when the school was incorporated under the name Trinity Medical College, Dr. Geikie became dean, a position which he continued to fill until 1903, when the college was amalgamated with Toronto University. In 1889 Dr. Geikie received the degree of D.C.L. from the University of Toronto, and in 1907 Queen's University, Kingston, conferred upon him the degree of LL.D. He

was also L.R.C.P.Lond. and an F.R.C.S. and L.R.C.S. of Edinburgh. Always active in good works, Dr. Geikie was president of the Toronto City Mission for twelve years and treasurer in Canada of the Armenian Relief Fund in 1896–97. He is survived by two sons, Drs. W. W. and A. J. Geikie, and one daughter.

DR. JAMES ARMSTRONG KILPATRICK died on January 18th after a rather long illness. He was educated at King's College, London, and took the diplomas of M.R.C.S.Eng., L.R.C.P.Lond., and L.S.A. in 1906. He afterwards held the posts of junior and senior resident medical officer and registrar at the Mount Vernon Hospital for Consumption and Diseases of the Chest, Hampstead, medical superintendent at the Westmorland Hospital, and assistant superintendent at the Crossley Sanatorium. Since April, 1911, he had been medical superintendent of the Northamptonshire Sanatorium for Consumptives at Creaton. He was a member of the Northamptonshire Division of the British Medical Association.

DR. JAMES STIRTON, who died at his residence in Glasgow on January 14th, was in his 84th year. He was educated at the University of Edinburgh, where he took the degree of M.D. in 1858. In the previous year he had taken the diploma of L.R.C.S.Edin. He was appointed lecturer on gynaecology in the Glasgow Royal Infirmary in 1876, and two years later became professor of midwifery in St. Mungo's College, a position which he retained for about fifteen years. He had a wide reputation as a botanist, and was one of the chief experts in Scotland on cryptogamic botany, a subject on which he published numerous papers in the *Transactions* of the Royal Philosophical Society of Glasgow.

DR. WALTER JAMES DODD, a pioneer of radiology in America, died on December 18th, aged 47. He was born in London and went to the United States when a youth. He worked in the Cambridge Laboratory, and in 1896 was appointed apothecary to the Massachusetts General Hospital. When Roentgen announced the discovery of the *x* rays Dodd gave himself up to their investigation. In 1896 the hospital installed its first induction coil; the early equipment was very rough, and in April, 1897, he was compelled by severe burns of his hands and face to suspend work for a time, but his spirit was undaunted. During eighteen years he underwent nearly fifty operations of increasing severity. One of these was performed just before the second Harvard Unit left for France, and although the wound was still unhealed Dodd insisted on accompanying it, and did most useful work. In 1908 he took the degree of M.D. at Vermont, and in the same year he became official roentgenologist to the Massachusetts General Hospital; in 1909 he was appointed instructor in the use of the Roentgen ray at the Harvard Medical School; in 1913 he was made instructor in roentgenology, a position which he held till his death. Among the pall-bearers at his funeral were Drs. J. Collins Warren, Richard C. Cabot, and other leaders of the medical profession in Boston.

DR. RAYMOND TRIPIER, for many years professor of pathological anatomy in the medical faculty of Lyons, died recently at the age of 78. As a teacher he had a great influence on generations of students, on whom he impressed the necessity of strict scientific method in observation. His chief work, entitled *Études anatomo-pathologiques*, was published in 1909. It embodies the results of his clinical studies of diseases of the heart, blood vessels, lung, and pleura. Tripier was keenly interested in art, to which he devoted himself almost entirely after he gave up teaching. He took an active part in the management of the Lyons Museum, but his love of observation continued to the last. All through his last illness he noted day by day the progress of the disease, and he directed that the record should be completed by a *post-mortem* examination. Professor Tripier left £8,000 to the city of Lyons, accumulated interest on which is to be applied every five years to the purchase of a work of art. He left the same amount to the University of Lyons for the promotion of the study of operative surgery and pathological anatomy.

PROFESSOR ACHILLE DE GIOVANNI, head of the medical clinic of the University of Padua, died recently at the age of 78. He was born in the province of Mantua, and in his youth fought under Garibaldi. In 1875 he was appointed professor of pathology at Pavia, and in 1879 he was called to the chair of clinical medicine at Padua. For eleven years he was president of the medical faculty there, and he was rector of the university from 1896 to 1900. He was made a Senator in 1902. He was the author of numerous writings on pathology, clinical medicine, biology, and philosophy. Perhaps his most important work is a study of the morphology of the human body in relation to predispositions to disease. Among his other writings are researches on the pathology of the sympathetic, on the vena cava, on the triangulation of the heart, on gout, and on the treatment of the later consequences of cerebral apoplexy. In 1898 Professor De Giovanni founded the National League against Tuberculosis, and he took a prominent part in the war against that disease in Italy.

DR. EDGARD HIRTZ, who died recently, was born at Colmar in 1849, and studied medicine first at the old faculty of Strassburg, and afterwards in Paris under Saint-Germain, Guéneau de Mussy, and Brouardel. He was appointed physician to the Paris hospitals in 1887, and was president of the Société de Thérapeutique in 1912. He was the author of memoirs on diseases of the lungs, hereditary phlebitis, hereditary mitral stenosis, the use of amyl nitrite in hysterical paralysis, and other subjects, all giving the results of his own experience. In 1886 he described a condition which he called curable cervical hypertrophic pachymeningitis, and which he held to be of rheumatic nature. He was an excellent clinician, and his lectures at the Laënnec and Necker hospitals attracted large numbers of students. An ardent patriot, he had fought as a volunteer in 1870.

DR. WALTER S. SUTTON, professor of surgery in the University of Kansas, died on November 10th, 1916. His name was well known to biologists by his researches on the mechanism of Mendelian inheritance.

LIEUTENANT-COLONEL ANDREW ROBERTSON GORDON died at Toronto on December 17th, 1916, after an illness which had lasted for more than a year. He was the fifth son of the Reverend Donald Gordon, and brother of the famous Canadian novelist Ralph Connor, and was born in Glengarry county, Ontario, in 1863. His education was received at the St. Mary's Collegiate, Toronto, and at the University of Toronto, where he took his medical degree in 1890. He began to practise in Toronto, and quickly acquired a large connexion; later he restricted himself to work as a consulting physician, specializing more particularly in diseases of the heart. In 1903 Dr. Gordon was appointed Associate Professor of Clinical Medicine in the University of Toronto. He was an excellent clinician, and exhibited exceptional ability as a teacher. His winning personality will be missed by his colleagues, his students, and his patients. He was among the first to volunteer for duty with the base hospital given by the University of Toronto, and was attached to the staff of that unit with the rank of lieutenant-colonel. He sailed for England with the hospital, which had become known as No. 4 Canadian General Hospital, but was taken seriously ill at Shorncliffe and invalided to Canada. It was with keen regret that his fellow officers parted with him, for he was an agreeable colleague and a man of broad sympathies.

LIEUTENANT-COLONEL FRANCIS TICHBORNE WILKINSON, R.A.M.C.(retired), died at Blackheath, on January 25th, aged 59. He was educated at Guy's Hospital, and took the diplomas of M.R.C.S. and L.R.C.P.Lond. in 1880. He entered the R.A.M.C. as surgeon on July 30th, 1881, became surgeon major on July 30th, 1893, and lieutenant-colonel on July 30th, 1901, retiring on October 4th, 1902. He served on the North-west frontier of India in the Isazai campaign of 1892; in the Nile campaign of 1898, when he was present at the battle of Khartoum, receiving the medal with a clasp and the Egyptian medal; and in the South African war in 1899–1900, when he took part in the relief of Ladysmith, the actions of Colenso, Spion Kop, Vaal Krantz, Tugela Heights, and Pieter's Hill, and received the Queen's medal with three clasps.

Medical News.

The Mesopotamian Commission has now completed the examination of witnesses.

The British Medical Association has converted £1,200 4½ per cent. war loan held on behalf of the Office Staff Superannuation Fund and applied for an additional £600 in the new war loan. The Insurance Acts Committee, acting on behalf of the Council of the Association, the trustees of the Insurance Defence Fund, has applied for £11,500 of the new war loan. The Association thus takes up a total of £13,300, of which £12,100 is new money.

Owing to the additional demands for glycerine for war purposes the Ministry of Munitions announces that it is anticipated that the supply of glycerine for dispensing purposes will be greatly reduced, and that no further glycerine will be issued for such purpose, since it is held that the stocks of glycerine in the hands of pharmacists should be sufficient to meet the reduced requirements.

At a meeting of representative medical women's societies, held on January 27th, a resolution was adopted expressing the opinion that it is a matter of urgent importance that under any local venereal disease scheme, a medical woman should be appointed at an adequate salary to have charge of the women's clinic and the women's venereal beds.

According to a report presented to the sanitary council of Persia the number of cases of cholera known to have occurred in the districts of Enzeli, Racht, Kazvine, and Teheran between March 21st and October 24th, 1916, was 428, with 209 deaths. There were 18 cases with 9 deaths in the city of Teheran between August 3rd and October 24th, 1916.

The President of the French Republic has issued a decree creating a new chair of social providence and assistance at the Collège de France. The salary is £480 a year, the funds for which will be provided by the Municipal Council of Paris and the General Council of the Seine. The teaching will deal largely with sickness assurance, invalidism, old age, and infant protection.

After discussions at the Board of Health in Berlin on the health and feeding of school children, the heads of schools were directed to report on October 1st, 1916, January 1st and April 1st, 1917, their general impressions of the health and intelligence of their pupils, with special reference to the detrimental influence, if any, of the food difficulties, and to investigate the question whether non-attendances was due to ill health caused by improper nourishment or not.

The fund of more than £600,000, bequeathed for the establishment of a hospital for cancer and nervous diseases by Anna T. Jeanes, is to be used for the establishment of a general hospital near Philadelphia. Dr. Winfried H. Smith, Superintendent of the Johns Hopkins Hospital, of Baltimore, was selected by the trustees to consider the claims of various Philadelphia hospitals, and it was finally decided that only by establishing a new and independent hospital could the purposes of the will be carried out.

A new periodical, the province of which is described by its title, *Archives Suisses de Neurologie et de Psychiatrie*, commenced publication with the beginning of the year. Its contents are in the three national languages of Switzerland—French, Italian, and German—and it is intended to be an international organ; the collaboration of foreign workers will be accepted, and the periodical will serve as a medium of communication between those who under existing conditions are prevented from corresponding in the journals of their respective countries. The editor is Professor Constantin von Monakow of Zürich, who has Drs. P. Dubois of Berne, Weber of Geneva, Maier of Zürich, and Manzoni of Tessin, as collaborators. The new periodical is published by Orell-Füssli of Zürich.

According to the report of the Surgeon-General of the United States Army, the health of the troops during 1915 was excellent. The mean strength of the entire force was 103,842. The non-effective rate from all causes was 25.22 per 1,000; the death-rate was 4.45 per 1,000, compared with 4.40, the corresponding figure in 1914, which was the lowest for many years. The total loss from all causes—death, discharge, and retirement—was 18.03 per 1,000. During the year covered by the report there were only eight cases of enteric fever, all of which ended in recovery. The Surgeon-General says: "The record of the fight against typhoid fever in the United States army during the decade and a half since the Spanish war constitutes one of the most interesting and brilliant chapters in the history of preventive medicine, beginning with the epoch-making investigation of the Typhoid Fever Board into the manner of infection and dissemination of the disease in the military camps of 1898, and culminating twelve years later in the equally notable adoption of antityphoid vaccination in the United States army." The non-effective rate of malaria during the year —0.54—is the lowest in the history of the United States army. Venereal diseases are still the greatest menace to the men in the ranks, and vigorous measures have been taken to control them. In regard to the reorganization of the United States army under the National Defence Act of 1916, it is pointed out that for the first time the Medical Department has been placed on a satisfactory basis.

Letters, Notes, and Answers.

Correspondents not answered are requested to look at the Notices to Correspondents of the following week.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

The telegraphic addresses of the British Medical Association and Journal are: (1) EDITOR of the British Medical Journal, *Aitiology, Westrand, London;* telephone, 2631, Gerrard. (2) FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London;* telephone, 2630, Gerrard. (3) MEDICAL SECRETARY, *Mediocera, Westrand, London;* telephone, 2634, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Impotent asks for advice as to the treatment of pains in the fingers in a case of a partial hemiplegia. The stroke occurred nearly three years ago, and some recovery of movement has taken place. The pains, which are a recent development, are very severe, and have not been relieved by any of the remedies tried.

LETTERS, NOTES, ETC.

Temporary Captain R.A.M.C., writes to suggest that officers of his rank on entering upon their third term of service should be promoted to temporary majors.

Treatment of Sore Throat.

Dr. C. A. Patton (Brixham) writes: At a time like the present it may interest many practitioners to know that the following mixture seems to give universally good results when used as a paint internally in cases of "sore throat"; even in diphtheritic cases it has been found to check the disease and to render the bacilli non-viable. No antitoxic serum was used in some of the cases which proved to be definitely diphtheria with good results. ℞ Tinct. iodi, glycerini, mucilag. tragacanth, āā ʒ ss; shake till clear of lumps and use as a paint internally.

Forceps.

S. writes that there is much misconception as to the original meaning of this word. It does not mean an instrument that is fenestrated or opens like a gate (*foris capio*). Facciolati's *Lexicon* (English edition, 1828) states that it signifies an instrument which took up hot things, the Cyclopes using them ("Cyclopes versant tenaci forcipe ferrum"—*Georgics*, iv, 175), or which could be made hot for any desired purpose; in short, *formus capio—formus* being an old Latin word meaning hot, akin to the Greek θερμός, just as *ferus* is akin to θήρ. Most writers, S. adds, insist on making the word plural—"a pair of forceps"—which is not strictly correct. "Scissors" is a plural form, so "a pair of scissors" is correct. Murray's *Dictionary* makes "forceps" singular and plural, and "scissors" plural.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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An average line contains six words.

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Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.